SOIL SURVEY

Somerset County, Maine Southern Part

Issued September 1972

UNITED STATES DEPARTMENT OF AGRICULTURE
Soil Conservation Service
In cooperation with
UNIVERSITY OF MAINE AGRICULTURAL EXPERIMENT STATION

Major fieldwork for this soil survey was done in the period 1946–66. Soil names and descriptions were approved in 1967. Unless otherwise indicated, statements in this publication refer to conditions in the survey area in 1966. This survey was made cooperatively by the Soil Conservation Service, the University of Maine Agricultural Experiment Station, and the Maine Soil and Water Conservation Committee. It is part of the technical assistance furnished to the Somerset County Soil and Water Conservation District.

Either enlarged or reduced copies of the soil map in this publication can be made by commercial photographers, or they can be purchased on individual order from the Cartographic Division, Soil Conservation Service, USDA, Washington, D.C. 20250.

HOW TO USE THIS SOIL SURVEY

THIS SOIL SURVEY contains information that can be applied in managing farms and woodlands; in selecting sites for roads, ponds, buildings, and other structures; and in judging the suitability of tracts of land for farming, industry, and recreation.

Locating Soils

All of the soils in the area surveyed are shown on the detailed map at the back of this publication. This map consists of many sheets made from aerial photographs. Each sheet is numbered to correspond with a number on the Index to Map Sheets.

On each sheet of the detailed map, soil areas are outlined and are identified by symbols. All areas marked with the same symbol are the same kind of soil. The soil symbol is inside the area if there is enough room; otherwise, it is outside and a pointer shows where the symbol belongs.

Finding and Using Information

The "Guide to Mapping Units" can be used to find information in this survey. This guide lists all of the soils of the survey area in alphabetic order by map symbol and gives the capability classification of each. It also shows the wildlife group and the woodland group in which each soil has been placed and the page where each soil is described.

Individual colored maps showing the relative suitability or degree of limitation of soils for many specific purposes can be developed by using the soil map and the information in the text. Translucent material can be used as an overlay over the soil map and colored to show soils that have the same limitation or suitability. For example, soils that have a slight limitation for a given use can be colored green, those with a moderate limitation can be colored yellow, and those with a severe limitation can be colored red.

Farmers and those who work with farmers can learn about use and management of the soils from the soil descriptions and from the subsections "Woodland" and "Use of Soils for Wildlife."

Foresters and others can refer to the section "Woodland," where the soils of the survey area are grouped according to their suitability for trees.

Game managers, sportsmen, and others can find information about soils and wildlife in the subsection "Use of Soils for Wildlife."

Community planners and others can read about soil properties that affect the choice of sites for homes and industrial buildings and for recreational areas in the subsection "Town and Country Planning."

Engineers and builders can find, under "Engineering Uses of Soils," tables that contain test data, estimates of soil properties, and information about soil features that affect engineering practices and structures.

Scientists and others can read about how the soils were formed and how they are classified in the section "Formation and Classification of Soils."

Newcomers in this part of Somerset County may be especially interested in the section "General Soil Map," where broad patterns of soils are described. They may also be interested in the information about the survey area given at the beginning of the publication and in the sections "Climate," and "Farming."

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SOIL SURVEY OF SOMERSET COUNTY, MAINE: SOUTHERN PART

BY JOHN R. ARNO, R. B. WILLEY, W. H. FARLEY, R. A. BITHER, AND BRUCE A. WHITNEY, SOIL CONSERVATION SERVICE

UNITED STATES DEPARTMENT OF AGRICULTURE, SOIL CONSERVATION SERVICE, IN COOPERATION WITH THE UNIVERSITY OF MAINE AGRICULTURAL EXPERIMENT STATION

SOMERSET COUNTY: Southern Part (fig. 1), covers an area of 668,928 acres. Most of the towns and farming areas in Somerset County are in this survey area; the northern part of the county is mainly commercial woodland.

Skowhegan, the largest town in Somerset County and the county seat, is in this survey area. It has a population of 7,661.

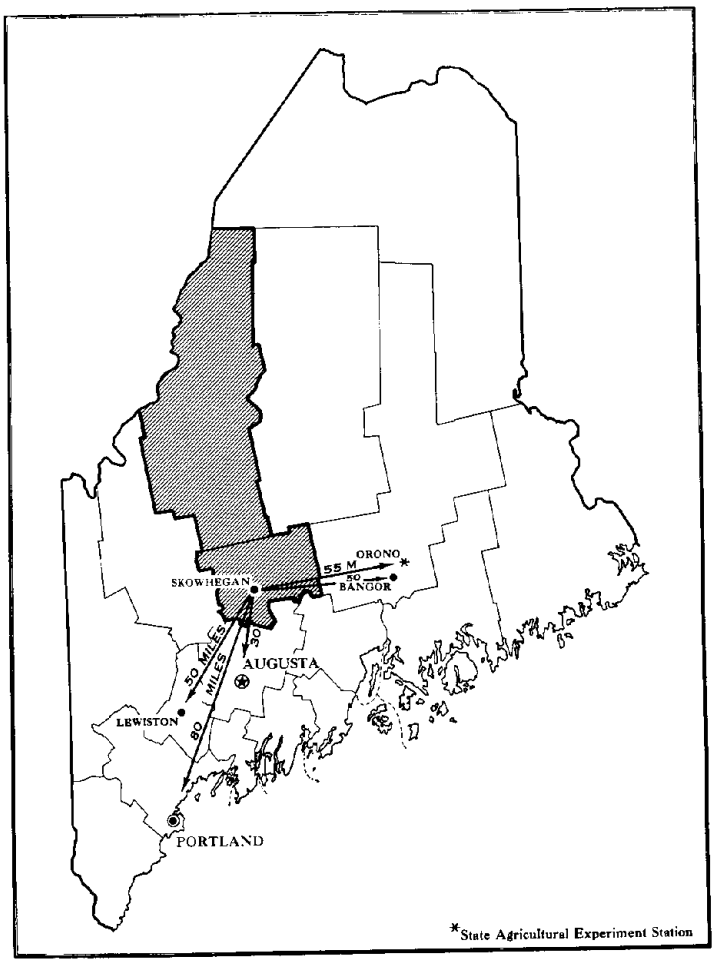

Figure 1.—Location of Somerset County: Southern Part, in Maine.

About 87 percent of the survey area is woodland, mainly the western and northern parts. The principal farming areas are in the eastern and central parts of the survey area. Dairy farming is the main farm enterprise, but livestock, other than dairy cattle, poultry, and farms of the general type, are also important. Pulpwood, used for manufacturing paper, is the major industry in the survey area.

How This Survey Was Made

Soil scientists made this survey to learn what kinds of soil are in this survey area, where they are located, and how they can be used. The soil scientists went into the survey area knowing they likely would find many soils they had already seen and perhaps some they had not. In the area they observed the steepness, length, and shape of slopes, the size and speed of streams, the kinds of native plants or crops, the kinds of rock, and many facts about the soils. They dug many holes to expose soil profiles. A profile is the sequence of natural layers, or horizons, in a soil; it extends from the surface down into the parent material that has not been changed much by leaching or by the action of plant roots.

The soil scientists made comparisons among the profiles they studied and they compared these profiles with those in counties nearby and in places more distant. They classified and named the soils according to nationwide, uniform procedures. The *soil series* and the *soil phase* are the categories of soil classification most used in a local survey.

Soils that have profiles almost alike make up a soil series. Except for different texture in the surface layer, all the soils of one series have major horizons that are similar in thickness, arrangement, and other important characteristics. Each soil series is named for a town or other geographic feature near the place where a soil of that series was first observed and mapped. Berkshire and Thorndike, for example, are the names of two soil series. All of the soils in the United States having the same series name are essentially alike in those characteristics that affect their behavior in the undisturbed landscape.

Soils of one series can differ in texture of the surface soil and in slope, stoniness, or some other characteristic

that affects use of the soils by man. On the basis of such differences, a soil series is divided into phases. The name of a soil phase indicates a feature that affects management. For example, Bangor silt loam, 3 to 8 percent slopes, is one of several phases within the Bangor series.

After a guide for classifying and naming the soils had been worked out, the soil scientists drew the boundaries of the individual soils on aerial photographs. These photographs show woodlands, buildings, field borders, trees, and other details that help in drawing boundaries accurately. The soil map in the back of this publication was prepared from the aerial photographs.

The areas shown on a soil map are called mapping units. On most maps detailed enough to be useful in planning the management of farms and fields, a mapping unit is nearly equivalent to a soil phase. It is not exactly equivalent, because it is not practical to show on such a map all the small, scattered bits of soil of some other kind that have been seen within an area that is dominantly of a recognized soil phase.

Some mapping units are made up of soils of different series, or of different phases within one series. Two such kinds of mapping units are shown on the soil map of this survey area: soil complexes and undifferentiated groups.

A soil complex consists of areas of two or more soils, so intermingled or so small in size that they cannot be shown separately on the soil map. Each area of a complex contains some of each of the two or more dominant soils, and the pattern and relative proportions are about the same in all areas. The name of a soil complex consists of the names of the dominant soils, joined by a hyphen.

An undifferentiated group is made up of two or more soils that could be delineated individually but are shown as one unit because, for the purpose of the soil survey, there is little value in separating them. The pattern and proportion of soils are not uniform. An area shown on the map may be made up of only one of the dominant soils, or of two or more. The name of an undifferentiated group consists of the names of the dominant soils, joined by "and." Rock land, Thorndike and Lyman materials, 0 to 15 percent slopes, is an example.

In most areas surveyed there are places where the soil material is so rocky, so shallow, or so severely eroded that it cannot be classified by soil series. These places are shown on the soil map and are described in the survey, but they are called land types and are given descriptive names. Dune land is a land type in this survey area.

While a soil survey is in progress, samples of soils are taken, as needed, for laboratory measurements and for engineering tests. Laboratory data from the same kinds of soil in other places are assembled. Data on yields of crops under defined practices are assembled from farm records and from field or plot experiments on the same kinds of soil. Yields under defined management are estimated for all the soils.

But only part of a soil survey is done when the soils have been named, described, and delineated on the map, and the laboratory data and yield data have been assembled. The mass of detailed information then needs to be organized in such a way as to be readily useful to different groups of users, among them farmers, managers of woodland, and engineers.

On the basis of yield and practice tables and other data, the soil scientists set up trial groups. They test these groups by further study and by consultation with farmers, agronomists, engineers, and others, then adjust the groups according to the results of their studies and consultations. Thus, the groups that are finally evolved reflect up-to-date knowledge of the soils and their behavior under present methods of use and management.

General Soil Map

The general soil map at the back of this soil survey shows, in color, the soil associations in this survey area. A soil association is a landscape that has a distinctive, proportional pattern of soils. It normally consists of one or more major soils and at least one minor soil, and it is named for the major soils. The soils in one association may occur in another, but in a different pattern.

A map showing soil associations is useful to people who want a general idea of the soils in an area, who want to compare different parts of an area, or who want to know the location of large tracts that are suitable for a certain kind of land use. Such a map is a useful general guide in managing a watershed, a wooded tract, or a wildlife area, in locating sites for engineering works and recreational facilities, and for town and country planning. It is not suitable for planning the management of a farm or field, or for selecting the exact location of a road, building, or similar structure, because the soils in any one association ordinarily differ in slope, depth, stoniness, drainage, and other characteristics that affect their management.

The five associations in this survey area are discussed in the following pages. The texture given in the title of the soil associations is the texture of the surface layer of the major soils in the association. For more detailed information about the individual soils in each association refer to the detailed map and to the section "Descriptions of the Soils."

1. Adams-Walpole-Buxton Association

Deep, excessively drained, poorly drained, and moderately well drained, nearly level to moderately steep loamy sands and fine sandy loams that formed in glacial outwash and silt loams that formed in marine or lacustrine sediments, or both

This association occupies bands, 1 mile to 3 miles wide, along both sides of the Kennebec, Carrabassett, and Sandy Rivers. It consists of nearly level soils on bottom lands and steep soils on dissected terraces. The elevation ranges from 200 feet in Skowhegan Township, in the south-central part of the survey area, to 380 feet in Bingham Township, in the north-central part of the survey area.

In this association the soils are in a complex pattern. In most places narrow bands of soils on alluvium are bordered on one side by a river and on the other side by irregularly rolling soils on fine-textured marine or lacustrine sediments that abut terraces consisting of deposits of glacial outwash (fig. 2).

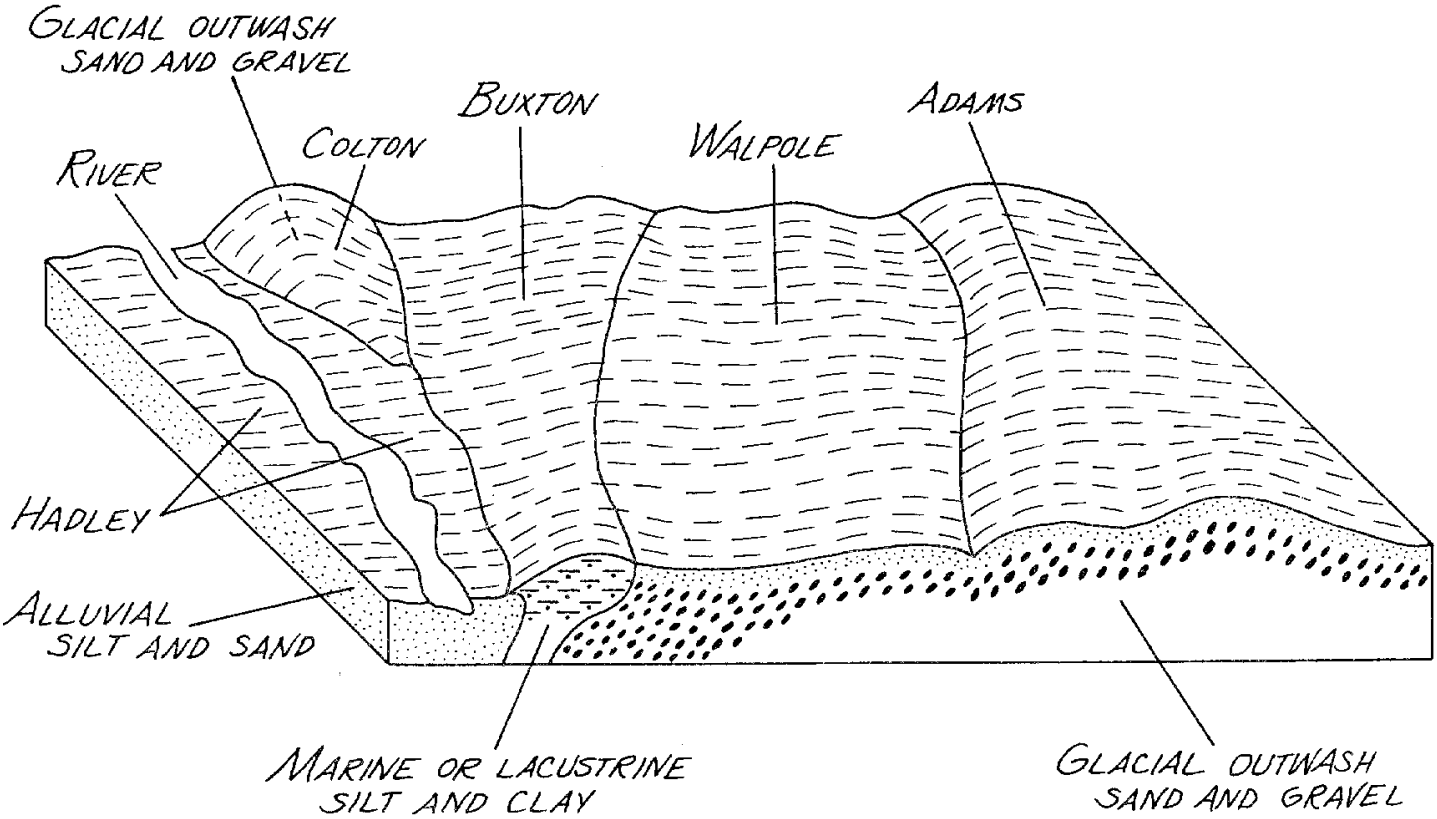

***Figure 2.*—Soils in the Adams-Walpole-Buxton soil association and their general location on the landscape.**

This association occupies about 16 percent of the survey area. About 26 percent of this association is Adams soils, 21 percent is Walpole soils, 11 percent is Buxton soils, and 42 percent is minor soils.

The Adams soils are mostly nearly level to gently sloping, but those on kames and dissected terraces are moderately steep. Adams soils are excessively drained, and they developed in fine sand and medium sand. The Walpole soils occur on terraces with the Adams soils. They are depressional or nearly level and poorly drained. Walpole soils developed in gravelly and sandy deposits. The Buxton soils are moderately well drained and gently sloping. They developed in marine or lacustrine sediments.

The minor soils in this association are the Scantic, Stetson, Colton, Madawaska, Skowhegan, Hadley, Winooski, Limerick, and Suffield. Areas of Mixed alluvial land and Dune land are also in the association. The Scantic soils make up about 4 percent of the association. They are nearly level and poorly drained. Stetson soils are well drained and the Colton soils are excessively drained. The Stetson and Colton soils together make up about 10 percent of the association. They occur on the gravelly terraces. The Skowhegan and Madawaska soils together make up about 9 percent of the association. They are moderately well drained and gently undulating to nearly level. About 10 percent of the association consists of the well drained Hadley, moderately well drained Winooski, and poorly drained Limerick soils, and very poorly drained Mixed alluvial land. The well-drained, rolling to steep Suffield soils are on terraces and occupy about 5 percent of the association. Dune land makes up slightly more than 1 percent of the association. It occurs near the Kennebec River in the vicinity of Anson and Madison.

Many towns are in this soil association. Much of the farmland is used for dairying and for cash crops. The Adams soils are droughty and are not well suited to farming. About one-third of their acreage is cropped, and the rest is woodland. The Walpole soils are mainly woodland, and the Buxton soils are used mainly for forage crops.

2. Monarda-Dixmont-Bangor Association

Deep, poorly drained to well-drained, nearly level to moderately steep silt loams that formed in glacial till; on uplands

This association occurs on upland ridges in the central and eastern parts of the survey area (fig. 3). The elevation generally is about 300 feet, but it ranges from 250 feet at Pittsfield, in the southeastern part of the survey area, to 600 feet at Ripley, in the northeastern part. The soils are nearly level to moderately steep.

This association occupies about 40 percent of the survey area. About 30 percent of this association is Monarda soils, 26 percent is Dixmont soils, 23 percent is Bangor soils, and 21 percent is minor soils.

The major soils in this association developed from olive, silty glacial till that averages 4 to 5 feet in thickness. Shale is the underlying bedrock. The Monarda soils

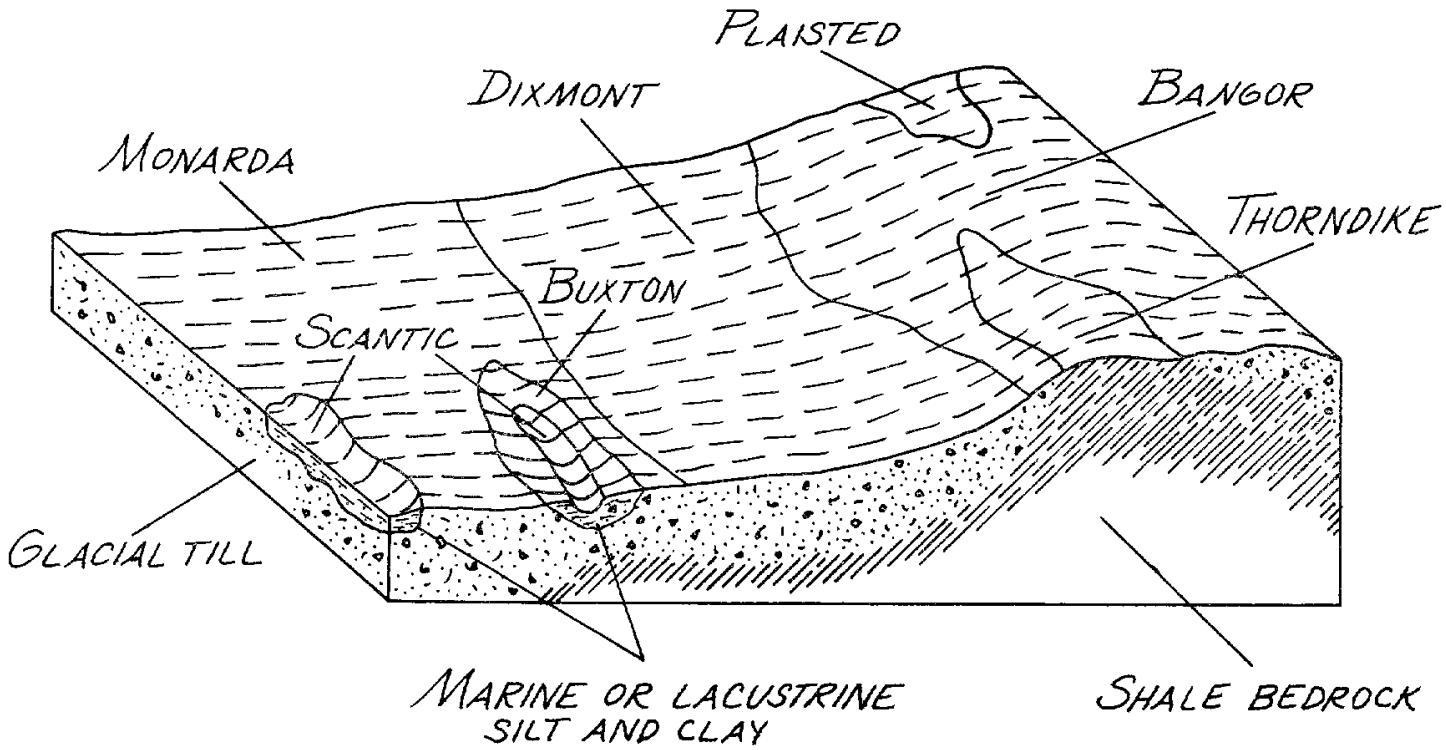

Figure 3.—**Soils in the Monarda-Dixmont-Bangor soil association and their general location on the landscape.**

are poorly drained and nearly level or depressional. The Dixmont soils are moderately well drained and mainly gently sloping. The Bangor soils are well drained and mainly gently undulating to moderately steep. In some areas, on the tops and sides of ridges, the Bangor soils are closely intermingled with the Thorndike soils.

Of the many kinds of minor soils that occur in this association, the Buxton, Plaisted, and Scantic soils occupy the largest acreages. Small areas of Mixed alluvial land and of Peat and muck are also in this association.

More than 90 percent of the acreage of Monarda soils is forested and stony. Only a few areas are cropped. About 30 percent of the acreage of the Dixmont soils has been cleared of trees and stones and is used for forage crops, and the rest is forested and stony. About 75 percent of the acreage of the Bangor soils has been cleared of stones and is used for row crops and forage crops, and the rest is woodland.

This association is used mainly for dairy farming. The farms are slightly larger than those in the other associations in the survey area. On many farms 60 to 100 acres are used for forage crops and for potatoes, corn, and other row crops. Most farms have wooded areas, and the most common trees are beech, birch, maple, spruce, fir, and pine.

3. Berkshire-Peru-Leicester Association

Deep, well-drained to poorly drained, nearly level to steep loams that formed in glacial till; on uplands

This association occurs in the western part of the survey area. In the northwestern part of the survey area this association generally is at an elevation of 900 feet on the ridgetops and about 500 feet at the base of the ridges, but Peaked Hill, in Lexington Township, is 1,861 feet above sea level. In the southwestern part of the survey area this association generally is at an elevation of 700 feet on the ridgetops and 350 feet at the base of ridges, but Mt. Tom, in Smithfield Township, is 765 feet above sea level.

This association occupies about 21 percent of the survey area. About 45 percent of this association is Berkshire soils, 27 percent is Peru soils, 13 percent is Leicester soils, and 15 percent is minor soils.

The major soils in this association have developed in schistose glacial till that averages 4 or 5 feet in thickness. The Berkshire soils are well drained and in most places have slopes of 15 percent or less. The Peru soils occur in depressions and other low areas on ridges and in many areas are near the base of slopes. They are moderately well drained, and in about two-thirds of their acreage, slopes range from 0 to 8 percent. The Leicester soils occur in long, narrow areas between the ridges. They are poorly drained, nearly level to gently sloping, and very stony. Figure 4 shows the location of the major soils on the landscape.

The minor Lyman soils make up about 8 percent of the association. These soils are shallow to bedrock and generally are gently rolling but are moderately steep or steep in some places. Other minor soils in this association are the Adams, Biddeford, Buxton, Colton, Limerick, Scantic, and Walpole. Also in this association are areas of Mixed alluvial land, Peat and muck, and Rock land. The Adams, Colton, and Stetson soils occur on terraces adjacent to the Sandy and Kennebec Rivers, mainly in Mercer and Smithfield Townships. Limerick soils and Mixed

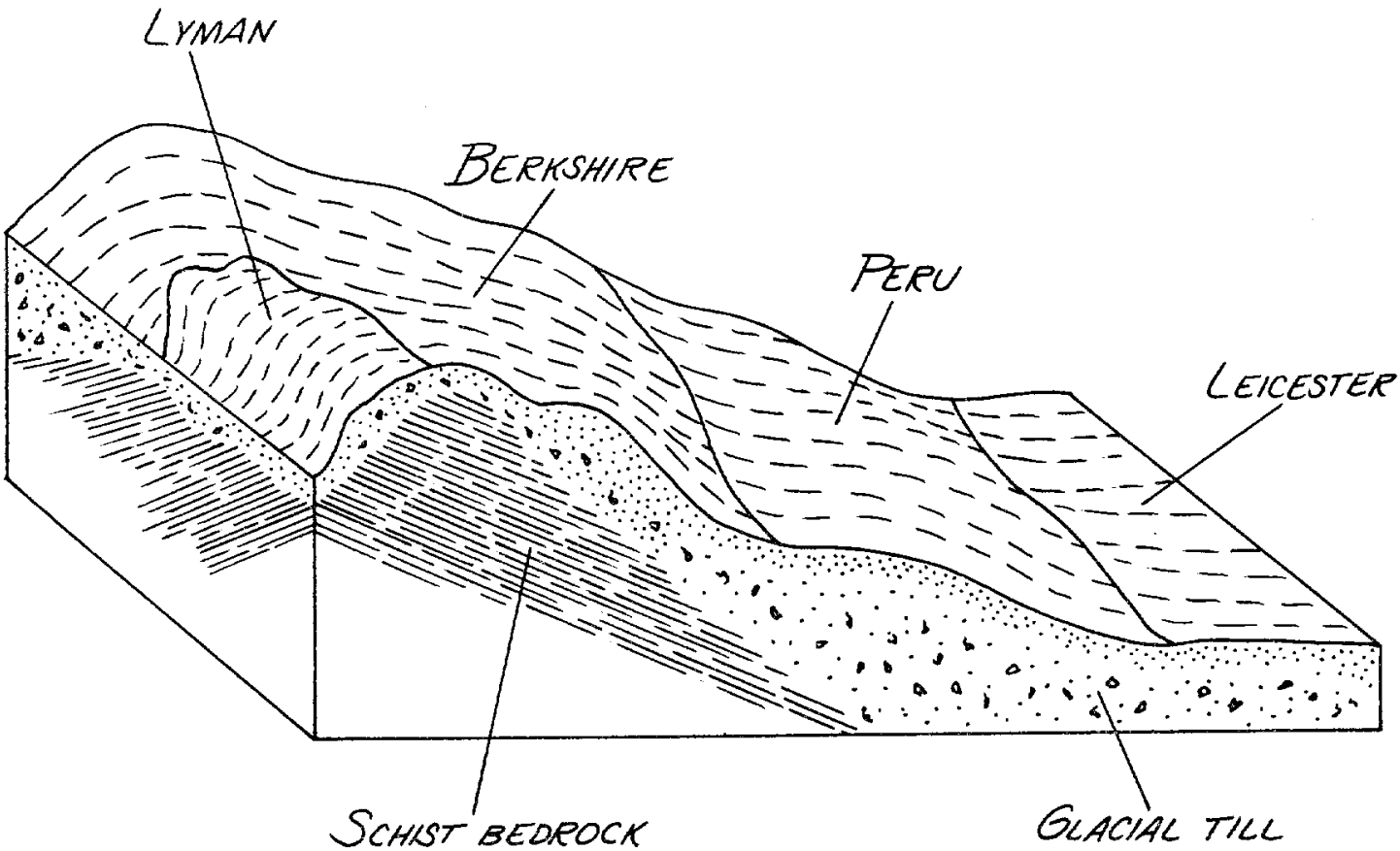

Figure 4.—**Major soils in the Berkshire-Peru-Leicester soil association and their general location on the landscape.**

alluvial land are along small streams throughout the association, and areas of Peat and muck border many of the lakes. The Biddeford, Buxton, and Scantic soils occur in small areas in the southern part of the survey area. Rock land occupies areas at the highest elevation in the western and northwestern parts of the survey area.

In this association the largest acreage is woodland, but there are a few dairy farms, mainly in the southern part. About 10 percent of the acreage of the Berkshire soils is used for farming, and about 8 percent of the acreage of the Peru soils is cropped. The Leicester soils are poorly suited to farming and to nonfarm uses, and nearly all of their acreage is forested.

4. Plaisted-Monarda-Thorndike Association

Well-drained and poorly drained, nearly level to moderately steep, deep gravelly loams and silt loams that have a fragipan and shallow silt loams; on uplands

This association occurs on ridges in Bingham, Brighton, Solon, Athens, and Harmony Townships. It also occupies a strip, 2 miles wide, that extends from St. Albans Mountain southwest to Canaan. The elevation in Bingham and Brighton Townships ranges from about 500 feet to 1,615 feet. The highest point is at Kelly Mountain. In the area that extends from St. Albans Mountain to Canaan the average elevation is 800 feet, but the highest point is on St. Albans Mountain, 1,090 feet above sea level.

This association occupies 18 percent of the survey area. About 34 percent of this association is Plaisted soils, 23 percent is Monarda soils, 21 percent is Thorndike soils, and 22 percent is minor soils.

In parts of this association the Plaisted and Thorndike soils are closely intermingled, but some areas are only Plaisted soils, and others are only Thorndike soils. Both Plaisted and Thorndike soils are well drained. They are mainly gently sloping to strongly sloping but are steep in some areas. The Plaisted soils are deep, and the Thorndike soils are shallow. The Monarda soils are poorly drained and depressional or nearly level. In some places the Plaisted and Monarda soils are very stony, and rock crops out in some areas of Thorndike soils (fig. 5).

Of the minor soils, the Dixmont soils make up 17 percent of the association. They occupy part of the undulating upland plains and smooth lower slopes. Dixmont soils are moderately well drained and, in some places, are very stony. Other minor soils are the Bangor and Adams. The Bangor soils occur alone in some places, but in the southern part of the survey area, they are closely intermingled with Thorndike soils. Also in the association are small areas of Mixed alluvial land along streams, and of Peat and muck near ponds.

This association is mainly woodland. Less than 10 percent of the acreage of the Plaisted soils and of the closely

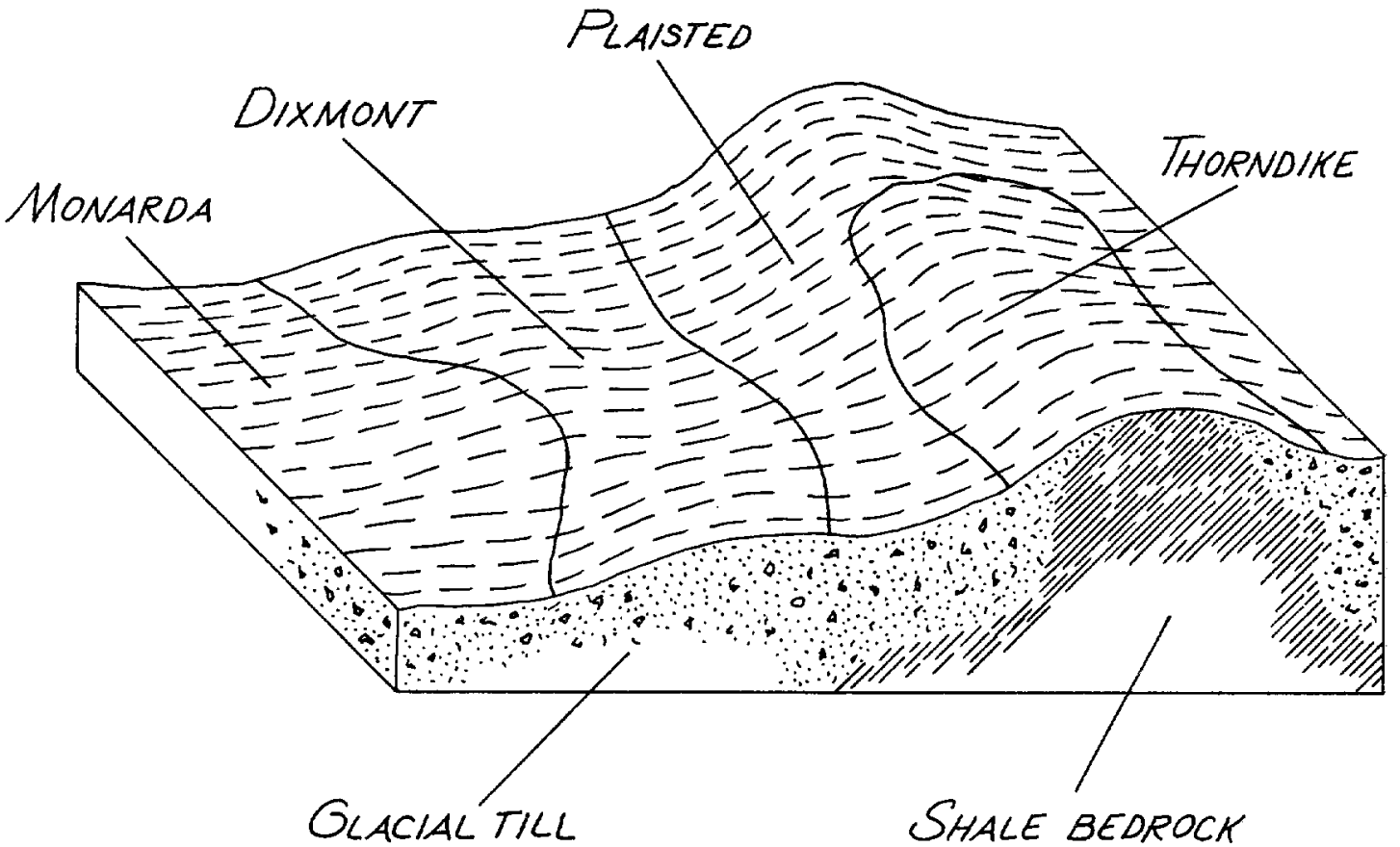

Figure 5.—**Major soils in the Plaisted-Monarda-Thorndike soil association and their general location on the landscape.**

intermingled Thorndike and Plaisted soils has been cleared and cropped. A few areas of the Monarda soils are used for hay or pasture. Because of the slope and the many rock outcrops, the shallow Thorndike soils are of limited use for farming and nonfarm purposes. Most areas of the very stony Plaisted, Monarda, and Dixmont soils are covered by trees, mainly beech, birch, maple, spruce, and fir.

5. Scantic-Peat and Muck-Biddeford Association

Deep, poorly drained and very poorly drained, nearly level silt loams that formed in marine or lacustrine sediments, or both, and in organic deposits

This association is in the eastern part of the survey area. The largest acreage is in Detroit and Pittsfield Townships in the southeastern part of the survey area, but a large area borders Mainstream Pond, in Cambridge Township in the northeastern part. The elevation commonly is 250 feet, but it is 200 feet in some places and is 180 feet in the peat bog at Pittsfield, which is probably the lowest point in the survey area.

This association occupies about 5 percent of the survey area. About 42 percent of this association is Scantic soils, 30 percent is Peat and muck, 18 percent is Biddeford soils, and 10 percent is minor soils.

The Scantic and Biddeford soils are on level or slightly depressional marine and lacustrine deposits (fig. 6) and are about 200 feet above sea level. Scantic soils are on broad flats near the outer edge of the association. They are slightly higher than associated soils. Scantic soils are poorly drained. Peat and muck are in the lowest parts of the association. The largest area is south of Pittsfield along the Sebasticook River. Biddeford soils are very poorly drained. They lie between areas of Peat and muck and areas of Scantic soils. Biddeford soils are nearly level and are saturated for long periods.

Also in this association are the poorly drained Limerick soils and very poorly drained Mixed alluvial land. They occur along streams and are frequently flooded.

The largest acreage of this association is idle, but a significant acreage of the Scantic soils, particularly in the vicinity of Pittsfield, is used for pasture and forage crops for dairy cattle. The areas of Peat and muck have a cover of water-tolerant trees, shrubs, and sedges. The Biddeford soils support a cover of sedges, alders, and a few cedars. Alders and sedges grow in most areas of Limerick soils and of Mixed alluvial land.

Descriptions of the Soils

This section describes the soil series and mapping units in Somerset County: Southern Part. The approximate acreage and proportionate extent of each mapping unit are given in table 1.

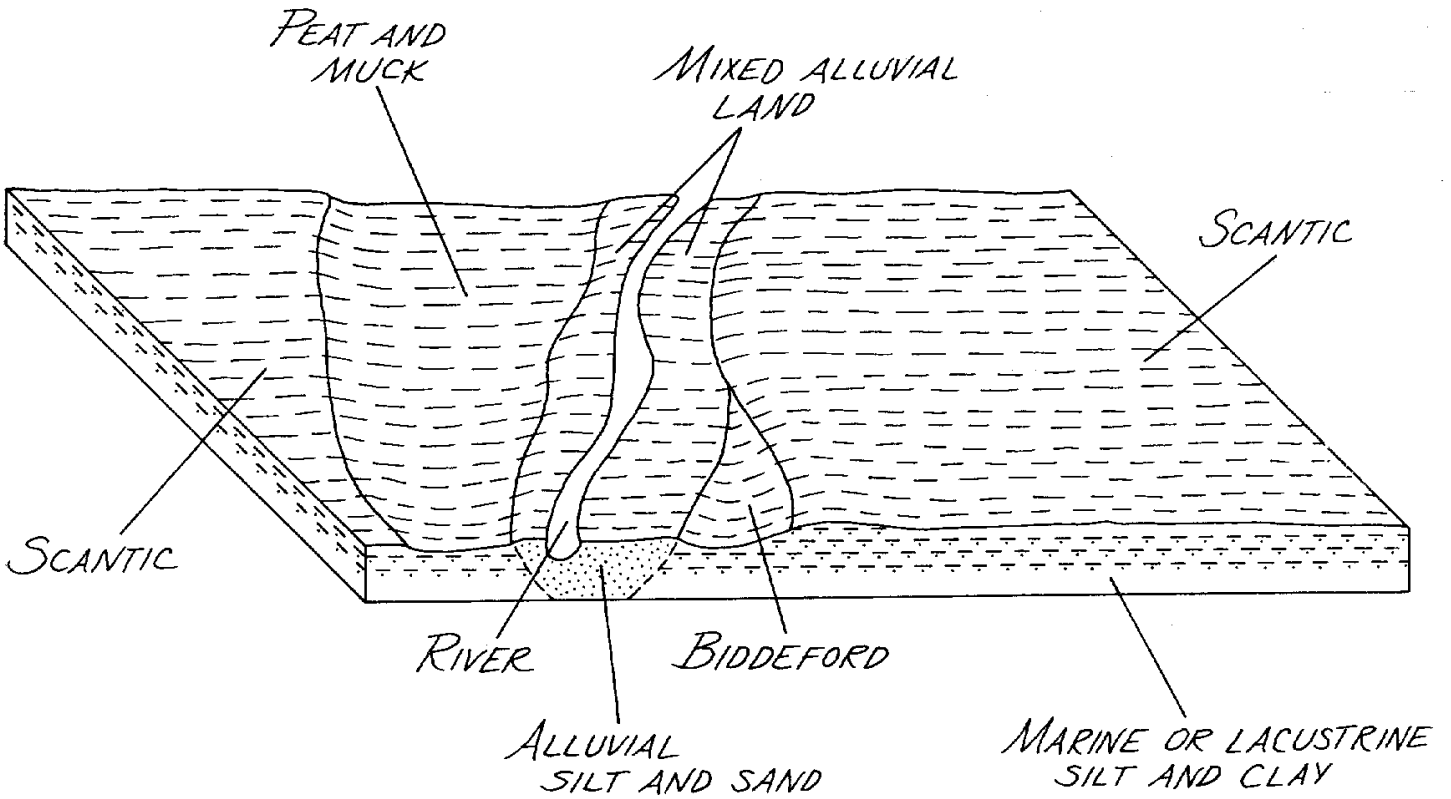

***Figure 6.*—Major soils in the Scantic-Peat and Muck-Biddeford soil association and their general location on the landscape.**

The procedure in this section is first to describe the soil series and then the mapping units in the series. Thus, to get full information on any one mapping unit, it is necessary to read the description of the unit and also the description of the soil series to which it belongs.

An essential part of each soil series is the description of the soil profile, the sequence of layers beginning at the surface and continuing downward to the depth beyond which roots of most plants do not penetrate. Each soil series contains a short description of a soil profile that has characteristics or ranges of characteristics within the ranges set for the series. Also given for the soil series is a much more detailed description of a profile representative of the series. Scientists, engineers, and others can use this detailed description in making highly technical interpretations. Unless otherwise stated, the colors described are for moist soils.

The description of each mapping unit contains suggestions for its management. Following the name of each mapping unit, there is a symbol in parentheses. This symbol identifies the mapping unit on the detailed soil map. Listed at the end of each description of a mapping unit is the capability subclass, the wildlife group, and the woodland group in which the mapping unit has been placed. The capability subclass in which each unit has been placed can also be found by referring to the "Guide to Mapping Units" at the back of this soil survey. The woodland group in which each soil has been placed is given in table 6 in the subsection "Woodland." Table 7 in the subsection "Use of Soils for Wildlife" shows the wildlife group for each mapping unit. Many terms used in this survey are defined in the Glossary at the back of this survey and in the "Soil Survey Manual" (*13*) [1].

Adams Series

The Adams series consists of excessively drained, nearly level to steep soils that formed in thick deposits of sand. These soils are on terraces, on the sides and tops of eskers (fig. 7), on kames, and in outwash areas in the valleys of the Kennebec, Carrabassett, and Sandy Rivers.

In most cultivated areas Adams soils have a dark grayish-brown loamy sand surface layer about 6 inches thick. The subsoil is strong-brown, yellowish-brown, and light olive-brown loamy sand that extends to a depth of about 23 inches. The underlying material is light olive-gray and very dark grayish-brown sand. Depth to the water table is more than 5 feet, and depth to bedrock is more than 6 feet.

Representative profile of Adams loamy sand, 0 to 8 percent slopes, in a field in Skowhegan, in a pit back of a shoe company, on eastern side of Kennebec River:

Ap—0 to 6 inches, dark grayish-brown (10YR 4/2) loamy sand; moderate, medium, granular structure; friable; many roots; very strongly acid; abrupt, smooth boundary.

B21h—6 to 11 inches, strong-brown (7.5YR 5/8) loamy sand; moderate, fine, granular structure; friable; many roots; 5 percent fine gravel; strongly acid; clear wavy boundary.

[1] Italic numbers in parentheses refer to Literature Cited, p. 72.

TABLE 1.—*Approximate acreage and proportionate extent of soils*

Soil	Acres	Percent	Soil	Acres	Percent
Adams loamy sand, 0 to 8 percent slopes	22,005	3.3	Madawaska fine sandy loam, 0 to 8 percent slopes	2,491	0.4
Adams loamy sand, 8 to 15 percent slopes	9,498	1.4	Melrose fine sandy loam, 3 to 8 percent slopes	1,331	.2
Adams loamy sand, 15 to 25 percent slopes	4,257	.6	Mixed alluvial land	8,614	1.3
Bangor silt loam, 3 to 8 percent slopes	14,596	2.2	Monarda silt loam	6,439	1.0
Bangor silt loam, 8 to 15 percent slopes, eroded	3,904	.6	Monarda very stony silt loam	99,995	14.9
Bangor very stony silt loam, 3 to 8 percent slopes	9,833	1.5	Peat and muck	14,438	2.2
Bangor very stony silt loam, 8 to 15 percent slopes	6,695	1.0	Peru loam, 0 to 8 percent slopes	2,664	.4
Bangor very stony silt loam, 15 to 25 percent slopes	1,603	.2	Peru very stony loam, 0 to 8 percent slopes	22,013	3.3
Berkshire loam, 0 to 8 percent slopes	5,603	.8	Peru very stony loam, 8 to 15 percent slopes	13,630	2.0
Berkshire loam, 8 to 15 percent slopes	3,043	.5	Plaisted gravelly loam, 3 to 8 percent slopes	4,962	.7
Berkshire very stony loam, 0 to 8 percent slopes	11,472	1.7	Plaisted gravelly loam, 8 to 15 percent slopes	3,592	.5
Berkshire very stony loam, 8 to 20 percent slopes	27,876	4.2	Plaisted very stony loam, 3 to 8 percent slopes	7,347	1.1
Berkshire very stony loam, 20 to 45 percent slopes	16,221	2.4	Plaisted very stony loam, 8 to 15 percent slopes	17,988	2.7
Biddeford silt loam	6,843	1.0	Plaisted very stony loam, 15 to 25 percent slopes	5,894	.9
Buxton silt loam, 0 to 8 percent slopes	20,091	3.0	Rock land, Thorndike and Lyman materials, 0 to 15 percent slopes	1,033	.2
Buxton silt loam, 8 to 15 percent slopes, eroded	1,738	.3	Rock land, Thorndike and Lyman materials, 15 to 45 percent slopes	1,443	.2
Colton gravelly sandy loam, dark materials, 8 to 15 percent slopes	3,434	.5	Scantic silt loam	29,231	4.4
Colton gravelly sandy loam, dark materials, 15 to 25 percent slopes	1,371	.2	Skowhegan loamy fine sand	7,605	1.1
Colton gravelly sandy loam, dark materials, 25 to 45 percent slopes	1,716	.3	Stetson fine sandy loam, 0 to 8 percent slopes	6,620	1.0
Dixmont silt loam, 0 to 8 percent slopes	17,991	2.7	Suffield silt loam, 8 to 15 percent slopes, eroded	4,939	.7
Dixmont silt loam, 8 to 15 percent slopes	1,541	.2	Suffield silt loam, 15 to 25 percent slopes, eroded	4,004	.6
Dixmont very stony silt loam, 0 to 8 percent slopes	59,404	8.9	Thorndike-Bangor silt loams, 0 to 8 percent slopes	19,985	3.0
Dixmont very stony silt loam, 8 to 20 percent slopes	11,970	1.8	Thorndike-Bangor silt loams, 8 to 15 percent slopes	8,374	1.3
Dune land	1,723	.3	Thorndike-Bangor silt loams, 15 to 30 percent slopes	869	.1
Hadley silt loam	4,702	.7	Thorndike-Plaisted loams, 0 to 8 percent slopes	7,227	1.1
Leicester very stony loam	18,341	2.7	Thorndike-Plaisted loams, 8 to 15 percent slopes	7,399	1.1
Limerick silt loam	2,210	.3	Thorndike-Plaisted loams, 15 to 30 percent slopes	951	.1
Lyman loam, 0 to 8 percent slopes	2,191	.3	Thorndike very rocky silt loam, 3 to 15 percent slopes	22,404	3.4
Lyman loam, 8 to 15 percent slopes	4,999	.7	Thorndike very rocky silt loam, 15 to 30 percent slopes	7,310	1.1
Lyman very rocky loam, 0 to 15 percent slopes	1,229	.2	Walpole fine sandy loam	25,497	3.8
Lyman very rocky loam, 15 to 45 percent slopes	2,822	.4	Winooski silt loam	1,690	.3
			Total	668,928	100.0

B22ir—11 to 17 inches, yellowish-brown (10YR 5/6) loamy sand; weak, fine, granular structure; friable; common roots; 5 percent fine gravel; strongly acid; clear, wavy boundary.

B3—17 to 23 inches, light olive-brown (2.5Y 5/6) loamy sand; single grain; loose; few roots; 5 percent fine gravel; strongly acid; clear, wavy boundary.

C—23 to 60 inches, very dark grayish-brown (2.5Y 3/2) and light olive-gray (5Y 6/2) sand; single grain; loose; few roots; 10 percent fine gravel; strongly acid.

The solum ranges from 16 to 28 inches in thickness, and the sand in it ranges from medium to fine. A large part of the solum consists of dark-colored minerals. The Ap, B21h, B22ir, B3, and C horizons are very strongly acid or strongly acid. The B21h horizon ranges from dark reddish brown (5YR 3/2) to yellowish brown (10YR 5/8), the B22ir horizon from yellowish red (5YR 5/8) to yellowish brown (10YR 5/8), and the B3 horizon from yellowish brown (10YR 5/4) to light olive brown (2.5Y 5/4).

The Adams soils are associated with the Colton, Madawaska, Skowhegan, Stetson, and Walpole soils. Adams soils are not gravelly, but the Colton and Stetson soils are. The Adams soils developed in material similar to that of the Madawaska and Skowhegan soils but are excessively drained instead of moderately well drained.

Adams loamy sand, 0 to 8 percent slopes (AaB).—In about half of the acreage, this soil has slopes of less than 5 percent and occurs on terraces away from uplands. It has the profile described as representative of the series. This soil has slow runoff and rapid permeability. It is droughty and is low in plant nutrients. Rapid leaching of plant nutrients is typical.

Included with this soil in mapping, in the vicinity of Bingham and Anson, are a few areas of soils that have a fine sandy loam surface layer. Also included, in Madison and Norridgewock, are a few areas of soils that have a few granite stones on the surface and, in the towns of Madison and Solon, a few areas of soils in which the underlying material is glacial till. Other inclusions are a few areas of soils that have silty or clayey material below a depth of about 40 inches.

Irrigation may be necessary on this soil if desirable crops are to grow well. Frequent applications of lime and fertilizer are essential. (Capability subclass IIIs; wildlife group 5; woodland group 4s1)

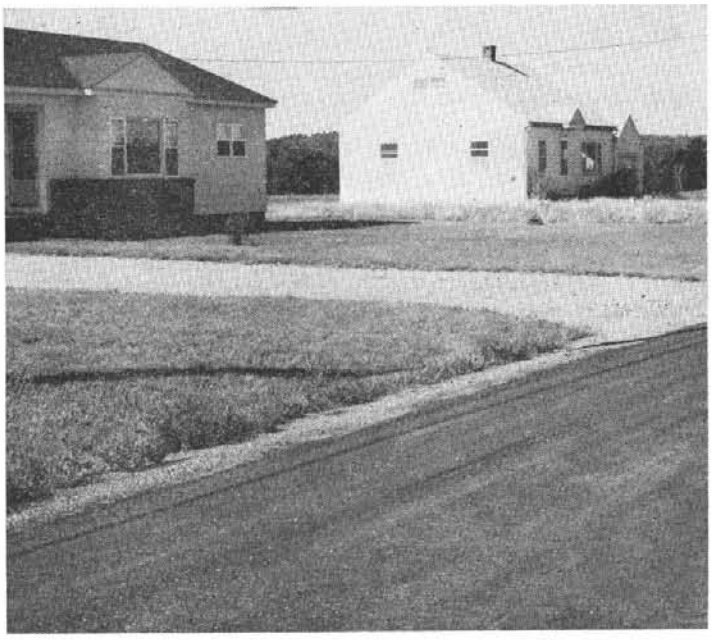

Figure 7.—**Housing development in the vicinity of Skowhegan. The soil is an Adams loamy sand. Adams soils have moderate or severe limitations for houses.**

Adams loamy sand, 8 to 15 percent slopes (AaC).—This soil occupies areas near uplands and in very narrow valleys. The slopes generally extend in two or more directions in any one area. Except that this soil is shallow to sand, its profile is similar to the one described as representative of the series. Loose sand is at a depth of about 12 inches. Except in bare areas, runoff is medium to slow. Permeability is rapid. This soil is droughty and is low in plant nutrients.

Included with this soil in mapping, in the towns of Madison and Solon, are a few areas of soils that have glacial till underlying material. Also included are a few small areas of soils that do not have a dark grayish-brown surface layer and a few areas in which bedrock crops out.

This soil is not suited to row crops. (Capability subclass IVs; wildlife group 5; woodland group 4s1)

Adams loamy sand, 15 to 25 percent slopes (AaD).—This soil occurs on faces of terraces and in strongly dissected areas of glacial outwash. Slopes are short. Except that an organic mat, 1 or 2 inches thick, is on the surface and the next layer is 1 to 3 inches of gray loamy sand, this soil has a profile similar to the one described as representative of the series. Stratified sand is at a depth of about 12 inches. This soil is erodible and very low in fertility. Permeability is rapid.

Included with this soil in mapping are a few areas of soils that have slopes of more than 25 percent.

A forest of white pine covers most of this soil, but a few areas have been cleared of trees. Woodland management that involves the use of heavy equipment is difficult on this soil because of the slope and the unstable sandy material. Grasses and legumes that are deep rooted and drought resistant should be seeded in areas used for pasture. (Capability subclass VIs; wildlife group 8; woodland group 4s2)

Bangor Series

The Bangor series consists of well-drained, gently sloping to moderately steep soils of the uplands. These soils occur on smooth ridges east of Skowhegan. They formed in olive, silty glacial till that is 10 to 30 percent thin, flat fragments of shale and slate.

A typical cultivated Bangor soil has a dark grayish-brown silt loam plow layer about 8 inches thick. The subsoil extends to a depth of about 23 inches and consists of strong-brown, yellowish-brown, and olive silt loam. The underlying material is olive silt loam glacial till. Depth to bedrock and to the water table is more than 5 feet.

Representative profile of Bangor silt loam, 3 to 8 percent slopes, in a cultivated field near Hartland, 1 mile west of the junction of State Routes 152 and 23, on the south side of State Route 23:

Ap—0 to 8 inches, dark grayish-brown (10YR 4/2) silt loam; moderate, medium, granular structure; friable; many roots; 15 percent coarse fragments; medium acid; abrupt, smooth boundary.

B21h—8 to 13 inches, strong-brown (7YR 5/6) silt loam; moderate, medium, granular structure; friable; many roots; 15 percent coarse fragments; medium acid; clear, wavy boundary.

B22ir—13 to 17 inches, yellowish-brown (10YR 5/4) silt loam; weak, fine, granular structure; friable; common roots; 15 percent coarse fragments; medium acid; clear, wavy boundary.

B3—17 to 23 inches, olive (5Y 5/4) silt loam; moderate, coarse, subangular blocky structure; friable; few roots; 15 percent coarse fragments; thin films on some peds; medium acid; clear, wavy boundary.

C—23 to 60 inches +, olive (5Y 4/3) silt loam; moderate, thick, platy structure; firm; few roots; 15 percent coarse fragments; medium acid.

The solum ranges from 20 to 36 inches in thickness. Reaction ranges from strongly acid to medium acid throughout the profile. The B21h horizon ranges from dark reddish brown (5YR 3/2) to yellowish brown (10YR 5/8), the B22ir horizon ranges from yellowish red (5YR 5/8) to yellowish brown (10YR 5/8), and the B3 horizon ranges from yellowish brown (10YR 5/4) to olive (5Y 5/4).

The Bangor soils are associated with the Dixmont, Monarda, and Thorndike soils. The Bangor soils are deep, but the Thorndike soils are shallow to bedrock. Bangor soils are well drained, but the Dixmont soils are moderately well drained, and the Monarda soils are poorly drained.

Bangor silt loam, 3 to 8 percent slopes (BaB).—This soil occupies areas, generally less than 20 acres in size, on the crests of ridges. It has the profile described as representative of the series. Runoff is medium, permeability is moderate, and the available moisture capacity is high.

Included with this soil in mapping are a few areas of nearly level soils that have a slightly thicker surface layer than that of this soil and are not so well drained. Also included, in the vicinity of Skowhegan, are areas of soils that have fine sandy loam underlying material. Other inclusions are a few small areas in which bedrock crops out.

This soil is one of the better soils in the survey area for oats and for corn, potatoes, sugar beets, and other row crops. It is especially well suited to alfalfa and to other forage crops. The workability of this soil is improved by tiling the wet spots in the slight depressions. Apple trees should be planted on the contour so as to conserve mois-

ture and to make management easier. (Capability subclass IIe; wildlife group 1; woodland group 3o1)

Bangor silt loam, 8 to 15 percent slopes, eroded (BaC2).—This soil has olive till about 15 inches from the surface. The slopes extend in one general direction in most places. Above a depth of 15 inches, layers of this soil are thinner than corresponding layers in the profile described as representative of the series. Runoff is moderately rapid in cultivated areas, and erosion is a hazard. Permeability is moderate, and the available moisture capacity is high.

Included with this soil in mapping are a few areas of soils that have slopes of more than 15 percent. Some fields have a few stones on the surface, though these interfere with the growing of row crops in only a few places. Also included, west of Skowhegan, are areas of soils in which the underlying material is glacial till of fine sandy loam texture. Other inclusions are small areas of a Dixmont silt loam.

This soil is suited to corn, potatoes, sugar beets, and oats and is well suited to forage crops. It is susceptible to frost heaving. (Capability subclass IIIe; wildlife group 1; woodland group 3o1)

Bangor very stony silt loam, 3 to 8 percent slopes (BgB).—This soil occurs on the crests and upper parts of ridges. Except for an organic mat 1 or 2 inches thick and the layer of gray silt loam 1 to 3 inches thick, this soil has a profile similar to the one described as representative of the series. Flat stones of shale and of sandstone cover about 0.2 percent of the surface. They are about 15 to 50 feet apart and are partly embedded in the soil. Runoff is medium, permeability is moderate, and the available moisture capacity is high.

Included with this soil in mapping are a few areas of very shallow soils and some areas of soils that have a few outcrops of shale. Also included are spots that are moderately wet.

Most of this soil is woodland consisting mainly of mixed stands of northern hardwoods, spruce, and fir. This soil is not used for crops other than apples because large stones on the surface and in the soil interfere with normal farming practices. (Capability subclass VIs; wildlife group 7; woodland group 3o1)

Bangor very stony silt loam, 8 to 15 percent slopes (BgC).—This soil is on the sides of ridges. Except that an organic mat, 1 or 2 inches thick, is on the surface and the next layer is 1 to 3 inches of gray silt loam, this soil has a profile similar to the one described as representative of the series. Flat stones of shale, sandstone, and granitic stones cover about 1 percent of the surface. Shale crops out in a few places. Seeps, or wet spots, occur in a few places. Runoff is medium, permeability is moderate, and the available moisture capacity is high.

Because large stones interfere with normal farming practices, this soil is not used for crops other than apples. The forest cover is mainly mixed stands of northern hardwoods, spruce, and fir. A few cedars grow in and near the wet spots. (Capability subclass VIs; wildlife group 7; woodland suitability group 3o1)

Bangor very stony silt loam, 15 to 25 percent slopes (BgD).—This soil occurs on the sides of ridges above streams. Its profile is similar to the one described as representative of the series, but a 1- or 2-inch layer of organic material is at the surface, and the next layer is 1 to 3 inches of gray silt loam. About 2 percent of the surface is covered by nearly flat stones of shale. Runoff is medium to rapid, permeability is moderate, and the available moisture capacity is high.

Included with this soil in mapping, in formerly cultivated fields, are small areas that have only a few stones on the surface. Also included are a few areas that have slopes of more than 25 percent.

Most of the acreage is in northern hardwoods, spruce, and fir. This soil can be used for orchards, but it is difficult to manage because of the slope. It is too steep and stony for cultivated crops. (Capability subclass VIs; wildlife group 8; woodland group 3r1)

Berkshire Series

The Berkshire series consists of deep, well-drained, nearly level to steep soils. These soils formed in schistose glacial till of fine sandy loam texture that is less than 30 percent coarse fragments. They occur mainly on ridges in Concord, Lexington, Embden, and New Portland Townships (fig. 8).

In most wooded areas Berkshire soils have a thin layer of organic material over a layer of gray loam 3 inches thick. The subsoil extends to a depth of about 28 inches. It is dark reddish-brown and yellowish-brown loam and gravelly loam in the uppermost 15 inches and olive gravelly fine sandy loam below. The underlying material is olive gravelly sandy loam till. Bedrock is at a depth of 5 feet or more. Depth to the water table is 4 feet or more.

Representative profile of Berkshire very stony loam, 0 to 8 percent slopes, in a wooded area in Concord Township, 1.3 miles west of the Kennebec River, on the eastern side of Fletcher Mountain:

O2—2 inches to 0, partly decomposed leaves and twigs; many stones entwined in the roots.

A2—0 to 3 inches, gray (10YR 6/1) loam; weak, thin, platy structure; friable; many roots; 10 percent coarse fragments; strongly acid; abrupt, wavy boundary.

B21h—3 to 10 inches, dark reddish-brown (5YR 3/2) loam; strong, fine, granular structure; friable; many roots; 10 percent coarse fragments; strongly acid; clear, wavy boundary.

B22—10 to 18 inches, yellowish-brown (10YR 5/8) gravelly loam; weak, fine, granular structure; friable; many roots; 20 percent coarse fragments; strongly acid; clear, wavy boundary.

B3—18 to 28 inches, olive (5Y 5/6) gravelly fine sandy loam; weak, thin, platy structure; slightly firm; few roots; 20 percent coarse fragments; strongly acid; clear, wavy boundary.

C—28 to 60 inches +, olive (5Y 4/3) gravelly sandy loam; weak, thin, platy structure; slightly firm; few roots; 20 percent coarse fragments; strongly acid.

The solum ranges from 20 to 28 inches in thickness. The A2, B21h, B22, B3, and C horizons range from very strongly acid to medium acid and, in some places, from gravelly loam or gravelly fine sandy loam to gravelly sandy loam in texture; the gravel content is low in some places. The B21h horizon ranges from dark reddish brown (5YR 3/2) to yellowish brown (10YR 5/8), the B22 from yellowish red (5YR 5/8) to yellowish brown (10YR 5/8), and the B3 horizon from yellowish brown (10YR 5/4) to olive (5Y 5/4).

The Berkshire soils occur with the Lyman soils on ridges, with the Leicester soils in depressions, and with the Peru soils at the base of slopes and between the ridges. Berkshire soils are deep to bedrock, but Lyman soils are shallow. Berkshire soils lack the fragipan that is typical for the Peru soils.

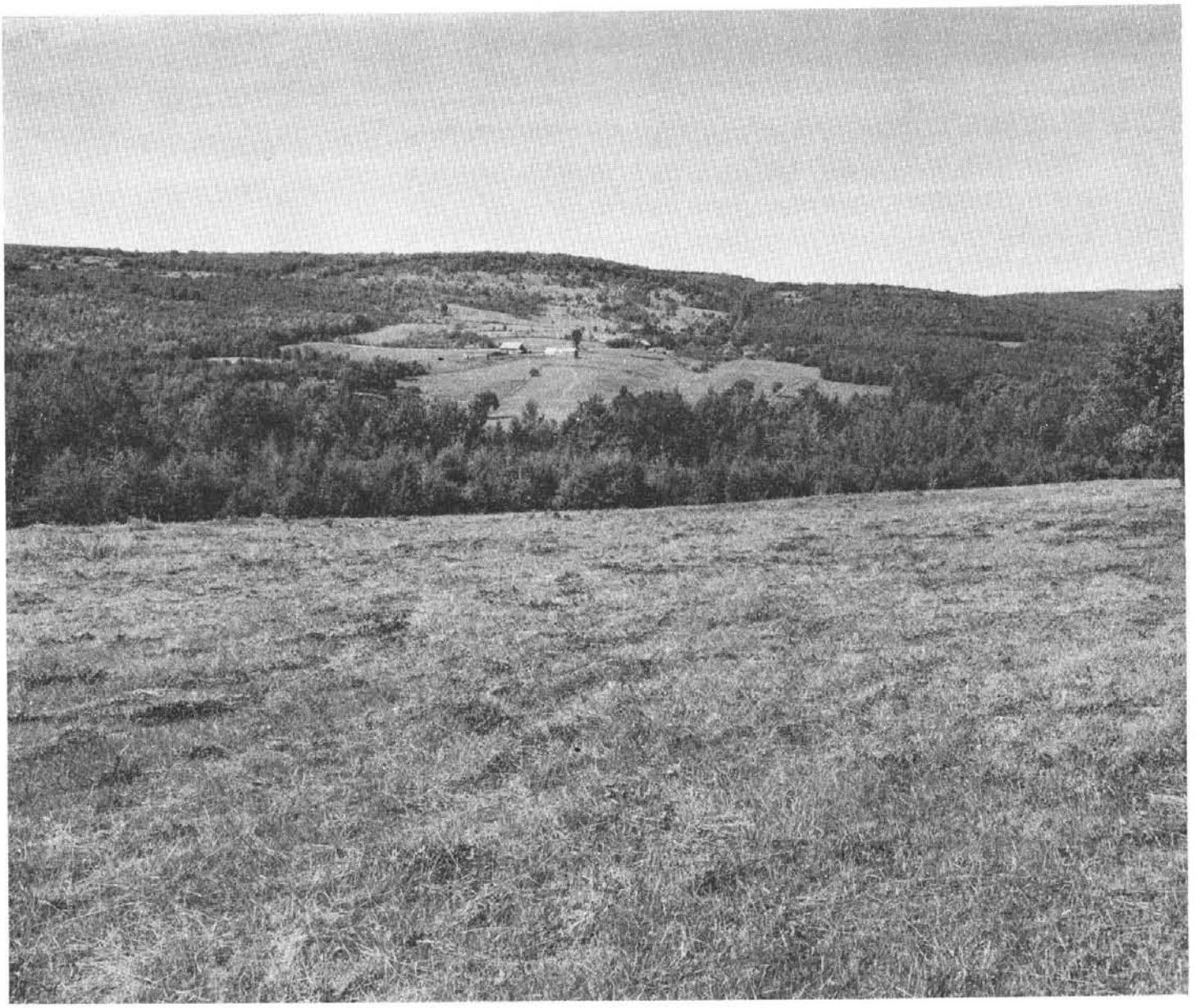

Figure 8.—**Typical landscape on Savage Hill in Concord Township. The soil is a Berkshire loam. Lyman soils are on the crest of ridges, and Peru soils are in the depressions.**

Berkshire soils are well drained, but the Peru soils are moderately well drained, and the Leicester soils are poorly drained.

Berkshire loam, 0 to 8 percent slopes (BhB).—This soil occurs on the upper part of long ridges. Slopes are more than 3 percent in most places. The surface layer is brown loam about 6 inches thick, and the next layer is strong-brown loam about 3 inches thick. Below a depth of about 9 inches, layers of this soil are similar to corresponding layers in the profile described as representative of the series. Runoff is medium, permeability is moderate, and the available moisture capacity is high. A few stones are on the surface and in the plow layer, though these do not interfere with the growing of cultivated crops.

Included with this soil in mapping are a few areas of nearly level soils that have a surface layer 7 or 8 inches thick and are not so well drained as this soil. Also included, in the vicinity of Norridgewock, are areas of soils that have a silt loam surface layer. Other inclusions are a few small areas in which schist rock crops out.

This soil is well suited to row crops and to hay and pasture plants, but it generally occurs in small areas. Planting apple orchards on the contour conserves moisture and facilitates management. (Capability subclass IIe; wildlife group 1; woodland group 3o1)

Berkshire loam, 8 to 15 percent slopes (BhC.)—This soil is on the sides of ridges. It has a surface layer of brown loam about 5 inches thick over a layer of strong-brown loam about 2 inches thick. Below a depth of about 7 inches, layers of this soil are similar to corresponding layers in the profile described as representative of the

series. Runoff is moderately rapid, and permeability is moderate to moderately rapid. The available moisture capacity is high.

Included with this soil in mapping are a few spots of soils that have a surface layer only 3 inches thick. Also included are a few areas in which there are small outcrops of schist rock.

Potatoes and other row crops can be grown on this soil. (Capability subclass IIIe; wildlife group 1; woodland group 3o1)

Berkshire very stony loam, 0 to 8 percent slopes (BkB).—This soil occurs on the upper parts of ridges. Slopes are more than 3 percent in most places. This soil has the profile described as representative of the series. About 3 percent of the surface is covered by stones and boulders of granite and schist. Runoff is medium, and permeability is moderate to moderately rapid.

Included with this soil in mapping are a few areas of a nearly level soil that resembles Peru very stony loam. Also included are a few small areas of a Lyman very rocky loam. Other inclusions are a few small areas in which bedrock crops out.

Most areas are in northern hardwoods, spruce, and fir, but a few areas have been cleared and are used for pasture. This is a good woodland soil. Logging and building and maintaining woodland roads are easy on this soil. Laying out a new orchard on the contour conserves moisture and facilitates management. (Capability subclass VIs; wildlife group 7; woodland group 3o1)

Berkshire very stony loam, 8 to 20 percent slopes (BkC).—This soil is on the sides of ridges. Its profile contains slightly thinner layers above a depth of 28 inches but is otherwise similar to the profile described as representative of the series. About 3 percent of the surface is covered by schist and granitic stones and boulders. Runoff is medium, and permeability is moderate to moderately rapid.

Included with this soil in mapping are small areas of a Lyman very rocky loam or of rock outcrops. Also included are a few small seepage spots.

Because the many large stones interfere with farming practices, this soil is not used for cultivated crops. The forest cover is mainly maple, beech, and birch. Except in the steeper areas, logging is easy. Laying out orchards on the contour conserves moisture and facilitates management. (Capability subclass VIs; wildlife group 7; woodland group 3o1)

Berkshire very stony loam, 20 to 45 percent slopes (BkE).—Most areas of this soil are moderately steep, but some are steep and hilly. Except for thinner layers above a depth of 28 inches and a thinner layer of underlying till, this soil has a profile similar to the one described as representative of the series. About 3 percent of the surface is covered by stones and boulders of schist and granite. Runoff is medium to rapid, and permeability is moderate to moderately rapid.

Included with this soil in mapping are areas where there are a few rock outcrops and seepage spots.

This soil is too steep and stony for farming. The forest cover is mainly birch, beech, and maple. Logging operations are difficult because of the slope. (Capability subclass VIIs; wildlife group 8; woodland group 3r1)

Biddeford Series

The Biddeford series consists of very poorly drained, nearly level soils that formed in silty clay sediments consisting of marine or lacustrine deposits, or both. These soils occur in concave areas and depressions in the valleys of the Kennebec, Carrabassett, and Sandy Rivers and in the vicinity of Pittsfield.

In most wooded areas the Biddeford soils have a 14-inch layer of organic material over a layer of gray silt loam about 5 inches thick. The subsoil extends to a depth of about 31 inches and consists of greenish-gray silty clay. The underlying material is also greenish-gray silty clay. Depth to bedrock is 6 feet or more. The water table is at the surface most of the year.

Representative profile of Biddeford silt loam, in a wooded area 1 mile west of Hartland, on the north side of State Route 23:

O1—14 to 12 inches, partly decomposed leaves and twigs.
O2—12 inches to 0, very dark brown (10YR 2/2) organic material; weak, fine, granular structure; friable; many roots; strongly acid; clear, wavy boundary.
A2g—0 to 5 inches, gray (5Y 5/1) silt loam; few, fine, prominent mottles of strong brown (7.5YR 5/6) to yellowish brown (10YR 5/6); weak, medium, blocky structure; firm; few roots; strongly acid; clear, wavy boundary.
B21g—5 to 19 inches, greenish-gray (5GY 5/1) silty clay; many, medium, distinct mottles of olive (5Y 5/6); massive; firm when moist, plastic when wet; neutral; gradual, wavy boundary.
B22g—19 to 31 inches, greenish-gray (5GY 5/1) silty clay; common, medium, prominent mottles of yellowish brown (10YR 5/4); massive; firm when moist, plastic when wet; neutral; gradual, wavy boundary.
Cg—31 to 60 inches, greenish-gray (5BG 5/1) silty clay; many, medium, prominent mottles of light olive brown (2.5Y 5/4); massive; firm when moist, plastic when wet; neutral.

The solum ranges from 20 to 40 inches in thickness. The B21g, B22g, and Cg horizons are silty clay loam or silty clay. Reaction ranges from medium acid to neutral in the B21g and B22g horizons.

The Biddeford soils are associated with the Buxton, Scantic, and Suffield soils. Biddeford soils are very poorly drained, but the Suffield soils are well drained, the Buxton soils are moderately well drained, and the Scantic soils are poorly drained.

Biddeford silt loam (Bo).—This soil is nearly level to concave, and it lacks natural drainage outlets. The water table is at the surface for most of the year. Runoff is slow, and permeability is slow to very slow.

Included with this soil in mapping are small areas of soils that do not have an organic layer at the surface.

This soil is too wet for farm crops, but it has limited use for pasture. Excessive wetness limits the choice of forage varieties to water-tolerant plants, such as reed canarygrass. There are few or no drainage outlets. The major vegetation is alder and sedges. (Capability subclass VIw; wildlife group 4; woodland group not assigned)

Buxton Series

The Buxton series consists of moderately well drained, gently undulating to sloping soils that formed in marine or lacustrine sediments, or both, mainly under a cover of spruce, fir, and pine. The soils occur on dissected benches

along the Kennebec, Carrabassett, and Sandy Rivers. They also occupy several areas in Pittsfield Township.

In most cultivated areas Buxton soils have a silt loam surface layer about 7 inches thick. The subsoil extends to a depth of about 26 inches and is mottled in the lower 9 inches. It is brown, yellowish-brown, and olive silt loam to a depth of 19 inches and is olive silty clay loam below. The underlying material is olive silty clay loam. Depth to bedrock is 6 feet or more, and depth to the water table is 1 to 2 feet.

Representative profile of Buxton silt loam, 0 to 8 percent slopes, in a field in Pittsfield, along the south side of State Route 100 near the Waldo County line:

Ap—0 to 7 inches, dark grayish-brown (10YR 4/2) silt loam; moderate, medium, granular structure; friable; many roots; medium acid; abrupt, smooth boundary.

B21—7 to 10 inches, brown (10YR 5/3) silt loam; moderate, fine, granular structure; friable; common roots; medium acid; clear, wavy boundary.

B22—10 to 14 inches, yellowish-brown (10YR 5/4) silt loam; few, fine, faint mottles of grayish brown (10YR 5/2) and dark brown (10YR 4/3); weak, fine, granular structure; friable; few roots; medium acid; clear, wavy boundary.

B23—14 to 19 inches, olive (5Y 5/3) silt loam; many, medium, distinct mottles of gray (N 5/0) and light olive gray (5Y 6/2); weak, fine, granular structure; friable; few roots; medium acid; clear, wavy boundary.

IIB24—19 to 26 inches, olive (5Y 5/3) silty clay loam; common, medium, distinct mottles of gray (N 5/0); moderate to strong, medium to coarse, subangular blocky structure; firm; thin coatings on sides of some peds and in pores of peds; medium acid; clear, wavy boundary.

IIC—26 to 60 inches, clay loam that is olive (5Y 5/3) outside of peds and olive (5Y 4/3) inside of peds; strong, thick, platy structure; very firm when moist, very hard when dry; black stains on some peds; slightly acid.

Wooded areas have a thin mat of organic material over a very dark grayish-brown surface layer about 1 inch thick; below this is a layer of brown silt loam about 5 inches thick. The solum ranges from 24 to 36 inches in thickness. Reaction ranges from strongly acid to medium acid in the Ap, B21, B22, and B23 horizons and from medium acid to slightly acid in the IIB24 and IIC horizons.

The Buxton soils are associated with the Biddeford, Scantic, and Suffield soils. Buxton soils are moderately well drained, but the Biddeford soils are very poorly drained, the Scantic soils are poorly drained, and the Suffield soils are well drained.

Buxton silt loam, 0 to 8 percent slopes (BuB).—This soil has slopes that generally extend in two directions and are more than 3 percent. It has the profile described as representative of the series. Runoff is slow enough to permit infiltration of water. Permeability is moderately slow to moderate to a depth of about 18 inches and is slow to very slow below a depth of 18 inches. In spring this soil warms up 1 or 2 weeks later than the coarser textured soils, and it is slow in drying out after a rain. Consequently, plowing, planting, and harvesting may be delayed for considerable periods.

Included with this soil in mapping are areas of soils in which the layer of silty clay loam is at a depth of about 12 inches. Also included are soils that have a fine sandy loam surface layer and a few areas of soils that have a sandy loam surface layer.

Most of this soil is used for hay crops or pasture. Deep-rooted plants may be damaged by frost heaving. This soil is poorly suited to apples. Tile drains may be needed if cultivated crops are grown. (Capability subclass IIw; wildlife group 2; woodland group 4o1)

Buxton silt loam, 8 to 15 percent slopes, eroded (BuC2).—Most of this soil has slopes of less than 12 percent. Except that depth to the silty clay loam layer is less, the profile of this soil is similar to the one described as representative of the series. Runoff is rapid. Permeability is moderately slow to moderate to a depth of about 18 inches and is slow to very slow below a depth of 18 inches. The hazard of erosion is severe in cultivated areas.

Included with this soil in mapping are a few areas where the slope is more than 15 percent and the soils are better drained.

This Buxton soil is well suited to hay crops and pasture. It is poorly suited to orchards. Tile drains are needed to drain some wet spots if cultivated crops are grown continuously. (Capability subclass IIIew; wildlife group 1; woodland group 5c1)

Colton Series

The Colton series consists of excessively drained, moderately sloping to steep soils that occur in the valleys of the Kennebec, Carrabassett, and Sandy Rivers. These soils formed in sandy and gravelly outwash material derived mainly from slate, shale, schist, and sandstone.

In most undisturbed areas Colton soils have a thin layer of partly decayed leaves and twigs over a layer of gray gravelly sandy loam about 3 inches thick. The subsoil, about 20 inches thick, is dark reddish-brown gravelly sandy loam in the uppermost part and is yellowish-red and light olive-brown gravelly loamy sand below. The underlying material is olive-gray and dark olive-gray sand and gravel. Bedrock is at a depth of 6 feet or more.

Representative profile of Colton gravelly sandy loam, dark materials, 8 to 15 percent slopes, in a wooded area along State Route 23, 1 mile north of Canaan:

O2—2 inches to 0, very dark brown mor; granular; strongly acid; abrupt, smooth boundary.

A2—0 to 3 inches, gray (10YR 6/1) gravelly sandy loam; weak, fine, granular structure; friable; many roots; 20 percent gravel; strongly acid; abrupt, irregular boundary.

B21h—3 to 5 inches, dark reddish-brown (5YR 3/3) gravelly sandy loam; weak, fine, granular structure; friable; many roots; 20 percent gravel; strongly acid; clear, wavy boundary.

B22ir—5 to 14 inches, yellowish-red (5YR 5/8) gravelly loamy sand; weak, medium, granular structure; friable; roots common; 35 percent gravel; strongly acid; clear, wavy boundary.

B3—14 to 23 inches, light olive-brown (2.5Y 5/4) gravelly loamy sand; single grain; loose; 30 percent gravel; strongly acid; clear, wavy boundary.

C—23 to 60 inches, olive-gray (5Y 5/2) and dark olive-gray (5Y 3/2) intermingled sand and gravel; single grain; loose; 40 percent gravel; strongly acid.

The solum ranges from 12 to about 26 inches in thickness. In cultivated areas there is an Ap horizon of brown gravelly sandy loam about 6 inches thick; below this, to a depth of about 23 inches, is yellowish-brown to olive-brown gravelly loamy sand. The content of gravel in the solum is 20 to 40 percent, and that in the C horizon is 35 to 60 percent.

The B2 horizon ranges from dark reddish brown (5YR 3/2) to yellowish brown (10YR 5/8); the redder colors are in the upper part of the horizon. The B3 horizon ranges from yellowish brown (10YR 5/4) to light olive brown (2.5Y 5/4), and the C horizon from light olive gray (5Y 6/2) to dark olive gray (5Y 3/2). Reaction ranges from very strongly acid

to strongly acid in the solum, and from strongly acid to medium acid in the C horizon.

The Colton soils are associated with the Adams, Skowhegan, Stetson, and Walpole soils. Colton soils are gravelly throughout, but the Adams and Skowhegan soils are sandy throughout and contain very little gravel. Colton soils are shallower to the layer of sand and gravel than the Stetson soils. They are excessively drained, but the Walpole soils are poorly drained.

Colton gravelly sandy loam, dark materials, 8 to 15 percent slopes (CnC).—This soil occupies the sides of kames and eskers and the dissected parts of terraces. It has the profile described as representative of the series. Runoff is slow to medium, and permeability is rapid to very rapid. This soil is droughty.

Included with this soil in mapping, along the Kennebec River, are a few areas of soils that formed over clayey sediments and a few areas where the soils formed over stratified bands of gravel, sand, and silt. Also included are some areas of soils that have about 12 inches of loamy sand over stratified sand and gravel.

Much of this soil is woodland consisting of mixed stands of pine, northern hardwoods, spruce, and fir, but a few areas are used for permanent hay and pasture. Row crops can be grown if management is intensive. This soil is poorly suited to orchards because of droughtiness and poor air drainage. (Capability subclass IIIes; wildlife group 5; woodland group 4s1)

Colton gravelly sandy loam, dark materials, 15 to 25 percent slopes (CnD).—This soil occurs on eskers and in rough areas of outwash. Except that the layer of gravel and sand is at a depth of 12 to 16 inches, this soil has a profile similar to the one described as representative of the series. Runoff is rapid, and permeability is rapid to very rapid. The available moisture capacity is very low.

Included with this soil in mapping are a few areas of soils that contain many cobblestones. Also included are a few areas that have stones and boulders on the surface and in the soil.

Most of the acreage is woodland consisting of white pine and northern hardwoods. Woodland management is slightly difficult because of the slope. This soil is better suited to long-term hay and pasture than to cultivated crops, but a row crop can be grown occasionally. Drought-resistant grasses and legumes and large amounts of lime and fertilizer are needed for hay crops and pasture. The use of crop residue to conserve moisture and contour farming are needed if this soil is cropped. (Capability subclass IVes; wildlife group 8; woodland group 4s2)

Colton gravelly sandy loam, dark materials, 25 to 45 percent slopes (CnE).—This soil occurs mainly on terrace faces. Its profile is similar to the one described as representative of the series. The layers of this soil vary widely in thickness, and depth to sand and gravel is 12 to 16 inches. Runoff is rapid, and permeability is rapid to very rapid.

Included with this soil in mapping are areas of soils that have slopes of more than 45 percent. Also included are a few areas that have cobblestones and boulders on the surface and in the soil.

Most of this soil is woodland, mainly pine and northern hardwoods. Because its slopes are short and steep, this soil is difficult to manage, even as woodland. It is too steep and droughty for farming. (Capability subclass VIIes; wildlife group 8; woodland group 4s2)

Dixmont Series

The Dixmont series consists of moderately well drained, nearly level to moderately sloping soils that occur on gently rolling ridges mainly in the eastern part of the survey area (fig. 9). These soils formed in glacial till that is 10 to 30 percent thin, flat fragments of shale and slate.

In most cultivated areas Dixmont soils have a dark grayish-brown silt loam plow layer about 8 inches thick. The subsoil extends to a depth of about 21 inches and is mottled in the lower part. It is yellowish-brown and olive-brown silt loam. The underlying material is olive to olive-gray, mottled silt loam glacial till. Shale or slate bedrock is at a depth of 4 feet or more. Depth to the water table is 1½ feet during wet periods.

Representative profile of Dixmont silt loam, 0 to 8 percent slopes, in a hayfield near Hartland, 3 miles west of intersection of State Routes 151 and 43, on the northern side of State Route 43:

Ap—0 to 8 inches, dark grayish-brown (10YR 4/2) silt loam; moderate, medium, granular structure; very friable; 10 percent coarse fragments; many roots; strongly acid; abrupt, smooth boundary.

B21h—8 to 14 inches, dark yellowish-brown (10YR 4/4) silt loam; moderate, medium, granular structure; friable; roots common; 15 percent coarse fragments; medium acid; clear, wavy boundary.

B22ir—14 to 21 inches, olive-brown (2.5Y 4/4) silt loam; common, medium, distinct mottles of olive gray (5Y 5/2) and yellowish brown (10YR 5/8); moderate, fine, subangular blocky structure; friable; few roots; 15 percent coarse fragments; medium acid; clear, wavy boundary.

C—21 to 50 inches, gravelly silt loam that is olive gray (5Y 5/2) outside of peds and olive (5Y 5/3) inside of peds; common, medium, faint mottles of gray (5Y 5/1) and olive yellow (5Y 6/8); weak, medium, platy structure; firm; 15 percent coarse fragments; medium acid.

The solum ranges from 18 to 26 inches in thickness. Reaction ranges from strongly acid to medium acid throughout the profile. The B21h horizon ranges from dark reddish brown (5YR 3/2) to yellowish brown (10YR 5/8), and the B22ir horizon ranges from yellowish red (5YR 5/8) to olive brown (2.5Y 4/4). In some places there is an olive (5Y 5/4) B3 horizon.

The Dixmont soils are associated with the Bangor and Monarda soils. They generally occur at the base of slopes. Dixmont soils are moderately well drained, but the Bangor soils occupy higher areas and are well drained, and the Monarda soils are in nearly level and depressional areas and are poorly drained.

Dixmont silt loam, 0 to 8 percent slopes (DxB).—This soil commonly occurs in Skowhegan Township and in areas that extend from Skowhegan Township. The slopes are smooth and 3 to 8 percent in most places. This soil has the profile described as representative of the series. Runoff is slow to medium, permeability is moderate, and the available moisture capacity is high.

Included with this soil in mapping are small areas of a moderately well drained soil that has fine sandy loam underlying material. Also included are areas, less than 2 acres in size, of Monarda silt loam.

This Dixmont soil is suited to most crops grown in the survey area and is well suited to forage crops. It is

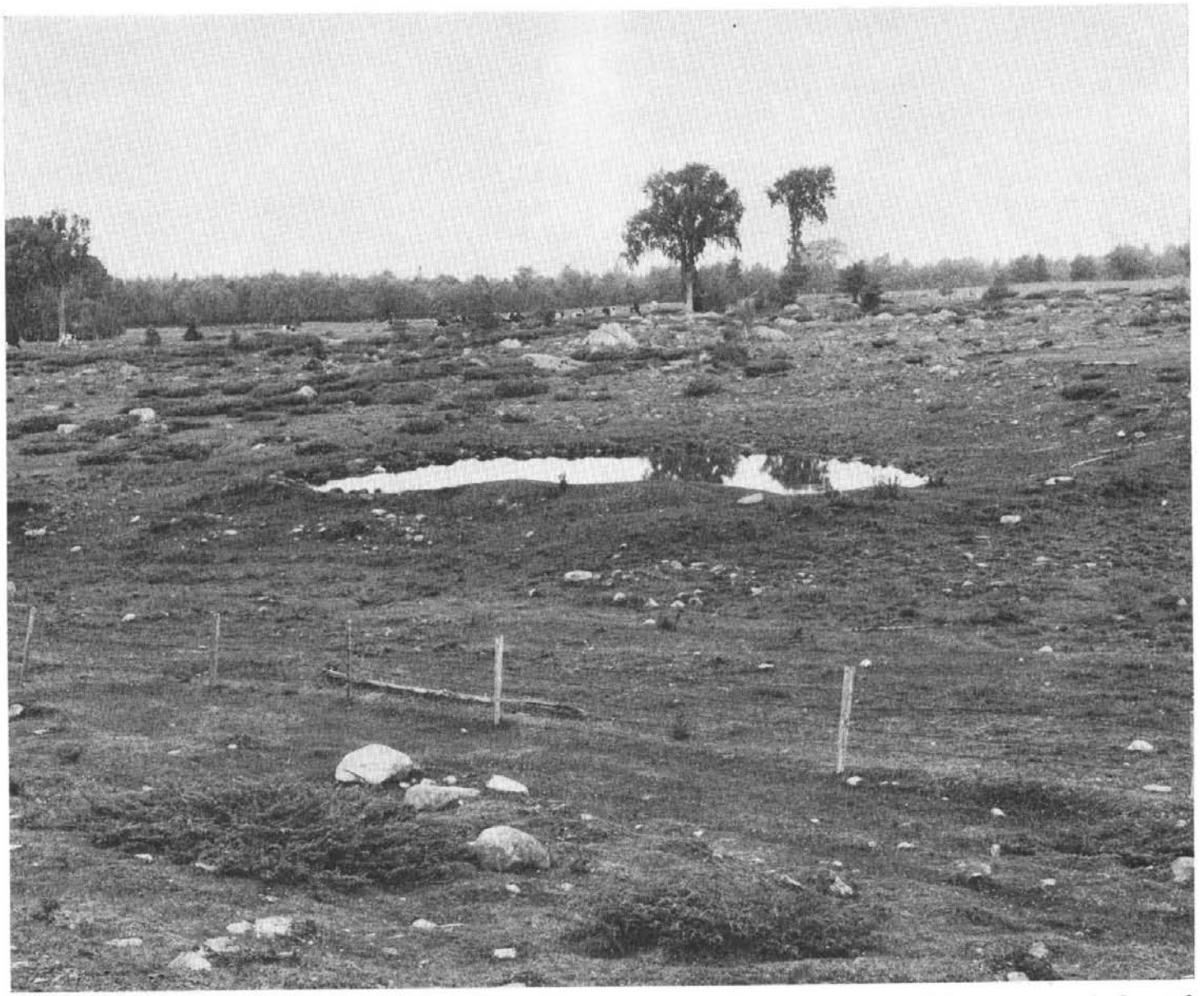

Figure 9.—An area of Dixmont, Bangor, and Monarda soils. A Bangor very stony silt loam occupies the higher areas in the background, a Dixmont very stony silt loam is in the slight swales, and a Monarda very stony silt loam is in the depressions.

susceptible to frost heaving. (Capability subclass IIw; wildlife group 2; woodland group 3o1)

Dixmont silt loam, 8 to 15 percent slopes (DxC).—This soil is in deep areas on the sides of ridges, and it is also on the sides of intermittent drainageways. It commonly occurs in Skowhegan Township and in areas that extend from Skowhegan Township northeast to Ripley. This soil has a surface layer about 6 inches thick; otherwise its profile is similar to the one described as representative of the series. Runoff is rapid, permeability is moderate to moderately slow, and the available moisture capacity is high.

Included with this soil in mapping are a few areas of eroded soils and areas of somewhat poorly drained soils. Also included are areas of soils that have fine sandy loam underlying material.

This soil is suited to all crops grown in the survey area, but it is used mainly for hay and pasture. (Capability subclass IIIew; wildlife group 1; woodland group 3o1)

Dixmont very stony silt loam, 0 to 8 percent slopes (DyB).—This soil has an organic layer about 3 inches thick over a layer of grayish-brown silt loam about 2 inches thick. Below this is a layer of strong-brown silt loam about 5 inches thick. Except in the vicinity of Brighton, flat stones of shale and sandstones cover about 0.3 percent of the surface and are partly embedded in the soil. In the vicinity of Brighton these stones cover about 1 percent of the surface. Runoff is slow to medium, and permeability is moderate to moderately slow.

Included with this soil in mapping are areas of soils that have loam or fine sandy loam underlying material.

Also included are a few areas of nearly level soils that are somewhat poorly drained.

Most of the acreage is in spruce, fir, and northern hardwoods, but a few areas are pastured. Because enough stones are on the surface and in the soil to interfere with farming practices, this soil is not used for crops. (Capability subclass VIs; wildlife group 12; woodland group 3o1)

Dixmont very stony silt loam, 8 to 20 percent slopes (DyC).—On the surface of this soil is a layer of organic material 2 inches thick over a grayish-brown layer 2 inches thick. The next layer is strong-brown silt loam about 7 inches thick. In most places about 0.5 percent of the surface is covered by sandstones and large fragments of shale, but stones cover about 2 percent of the surface on the east side of Bingham and in Brighton Township. Runoff is rapid, and permeability is moderate to moderately slow.

Included with this soil in mapping are areas of soils that have fine sandy loam underlying material.

Spruce, fir, and northern hardwoods grow on most of this soil, but a part of the acreage is pastured. This soil is not used for crops because the stones interfere with farming practices. (Capability subclass VIs; wildlife group 12; woodland group 3o1)

Dune Land

Dune land (3 to 45 percent slopes) (Dz) is surrounded by Adams soils in most places. It is nearly level to hilly and is excessively drained. The soil material is sand that is often shifted by the wind and shows no profile development. Permeability is rapid to very rapid, and the available moisture capacity is very low. This land is extremely droughty, and the vegetation consists only of a few low-growing shrubs. (Capability subclass VIIIs; wildlife group 13; woodland group not assigned)

Hadley Series

The Hadley series consists of well-drained, nearly level soils that occur on bottom lands along the Kennebec, Carrabassett, and Sandy Rivers and other streams in adjacent areas. These soils are flooded occasionally. They formed in recent alluvium of silty and very fine sandy texture. These sediments were derived from slate, shale, and schist.

In most cultivated areas Hadley soils have a dark grayish-brown silt loam surface layer about 9 inches thick. The subsoil, about 8 inches thick, is olive-brown silt loam. The underlying material is grayish-brown silt loam. Bedrock is at a depth of 6 feet or more. During wet periods the water table is at a depth of about 4 feet.

Representative profile of Hadley silt loam, in a cultivated field near Norridgewock, in the oxbow of the Sandy River:

Ap—0 to 9 inches, dark grayish-brown (10YR 4/2) silt loam; strong, medium, granular structure; friable; many roots; medium acid; abrupt, smooth boundary.

B2—9 to 17 inches, olive-brown (2.5Y 4/4) silt loam; weak, fine, granular structure; friable; roots common; medium acid; abrupt, smooth boundary.

C—17 to 60 inches, grayish-brown (2.5Y 5/2) silt loam; weak, fine, granular structure; friable; few roots; medium acid.

The solum ranges from 16 to 24 inches in thickness. The B2 and C horizons are silt loam or very fine sandy loam. The B2 horizon ranges from brown (10YR 5/3) to olive brown (2.5Y 4/4), and the C horizon ranges from grayish brown (2.5Y 5/2) to olive (5Y 5/4). Reaction ranges from strongly acid to medium acid throughout the profile.

The Hadley soils are associated with the Limerick and Winooski soils. The Hadley soils are well drained, but the Limerick soils are poorly drained, and the Winooski soils are moderately well drained.

Hadley silt loam (Ha).—This soil is nearly level and, in most places, is less than 50 feet above the normal level of streams. Most areas are flooded only when floodwaters are extremely high. Flooding is less likely along the Kennebec River than along the other streams. Runoff is slow, permeability is moderate, and the available moisture capacity is high.

Included with this soil in mapping are narrow, undulating areas of soils having very short slopes of more than 4 percent. Also included are a few acres of soils that have a loamy fine sand texture or have sandy loam texture.

This soil is one of the better soils in the survey area for silage corn, sugar beets, forage crops, and other commonly grown crops (fig. 10). Crops respond well to additions of fertilizer. If management is good, this soil can be used intensively for cultivated crops. (Capability subclass I; wildlife group 1; woodland group 3o1)

Leicester Series

The Leicester series consists of poorly drained soils of the uplands. These soils occur on ridges, mainly in Anson, New Portland, Embden, Lexington, and Concord Townships. They formed in gravelly sandy loam glacial till. This material is derived from sandstone, schist and granite.

A typical wooded Leicester soil has a thin layer of organic material over a layer of very dark grayish-brown and light brownish gray loam about 5 inches thick. Below this is a layer of mottled grayish-brown fine sandy loam about 3 inches thick. The subsoil, about 22 inches thick, is grayish-brown, mottled gravelly sandy loam. The

Figure 10.—**Field of silage corn on Hadley silt loam.**

underlying material is light olive-gray, mottled gravelly sandy loam. Bedrock is at a depth of 4 feet or more. The water table is about a foot from the surface for most of the year.

Representative profile of Leicester very stony loam, in a wooded area near New Portland, 0.5 mile northeast of bridge over the Carrabassett River:

O2—2 inches to 0, very dark grayish-brown (10YR 3/2), partly decomposed leaves and twigs; many stones.
A1—0 to 5 inches, very dark grayish-brown (10YR 3/2) loam; strong, medium, granular structure; friable; many roots; 15 percent coarse fragments; strongly acid; abrupt, wavy boundary.
A2—5 to 8 inches, grayish-brown (10YR 5/2) gravelly fine sandy loam; few, fine, faint mottles of gray; weak, thick, platy structure; friable; roots common; 30 percent coarse fragments; strongly acid; clear, wavy boundary.
B2g—8 to 28 inches, grayish-brown (2.5Y 5/2) gravelly sandy loam; many, coarse, prominent mottles of gray (10YR 5/1) and few strong mottles of brown (7.5YR 5/6); weak, fine, granular structure; friable; few roots; 30 percent coarse fragments; strongly acid; clear, wavy boundary.
Cg—28 to 50 inches, light olive-gray (5Y 6/2) gravelly sandy loam; few, medium, prominent mottles of yellowish brown (10YR 5/6); massive; slightly firm; 30 percent coarse fragments; strongly acid.

The Leicester soils occur with the Berkshire and Peru soils. They are poorly drained, but the Berkshire soils are well drained, and the Peru soils are moderately well drained.

Leicester very stony loam (Lc).—This soil is nearly level, and the slopes are concave. Stones generally cover about 3 percent of the surface, but they cover nearly all the surface in a few places. Many boulders are on the surface in some places. Runoff is slow, and permeability is moderate to moderately rapid. The water table is at a depth of about 1 foot for most of the year.

Included with this soil in mapping are areas of soils that have a mucky surface layer and areas in which the soils are better drained than this soil.

Most of the acreage is in spruce, fir, and a few hardwoods. Because of excessive wetness and stoniness, this soil is not used for farming. (Capability subclass VIIsw; wildlife group 11; woodland group 4w1)

Limerick Series

The Limerick series consists of poorly drained, nearly level soils on bottom lands along the Kennebec, Carrabassett, and Sandy Rivers and their tributaries. These soils formed in alluvium derived from slate, shale, and schist.

A typical Limerick soil has a very dark grayish-brown silt loam plow layer about 8 inches thick. The subsoil extends to a depth of about 19 inches and is mottled. It is dark grayish-brown silt loam. The underlying material is very dark grayish-brown and gray silt loam. Depth to bedrock is 6 feet or more. The water table is near the surface for most of the year.

Representative profile of Limerick silt loam, in a field 1.3 miles south of Bingham, on the western side of the Kennebec River:

Ap—0 to 8 inches, very dark grayish-brown (10YR 3/2) silt loam; moderate, medium, granular structure; friable; many roots; medium acid; abrupt, smooth boundary.
B2g—8 to 19 inches, dark grayish-brown (2.5Y 4/2) silt loam; common, medium, faint mottles of grayish brown (2.5Y 5/2) and light olive brown (2.5Y 5/6); weak, fine, granular structure; friable; roots common; medium acid; clear, wavy boundary.
Cg—19 to 60 inches, very dark grayish-brown (2.5Y 3/2) silt loam; few, coarse, distinct mottles of gray (5Y 5/1); weak, fine, granular structure; friable; few roots; medium acid.

The solum ranges from 15 to 29 inches in thickness. The texture throughout the profile is either silt loam or very fine sandy loam. Reaction ranges from medium acid to slightly acid throughout. In undisturbed areas there is an A1 horizon that ranges from very dark grayish brown (10YR 3/2) to dark grayish brown (2.5Y 4/2). The B horizon ranges from dark grayish brown (2.5Y 4/2) to olive gray (5Y 5/2) and is distinctly or prominently mottled.

The Limerick soils occur with the Hadley and Winooski soils. They are poorly drained, but the Hadley soils are well drained, and the Winooski soils are moderately well drained.

Limerick silt loam (Lk).—This soil is nearly level. It occurs on stream terraces and is subject to occasionally flooding, mainly early in spring. Runoff is slow, permeability is moderate, and the available moisture capacity is high.

Included with this soil in mapping are a few areas of soils that have fine sandy loam texture. Also included are a few areas in which floods have recently deposited silty and fine sandy sediments.

This soil can be used for row crops, hay, and pasture. It is suited to corn, oats, clover, and grasses if lime and fertilizer are added in adequate amounts. (Capability subclass IIIw; wildlife group 9; woodland group 4w1)

Lyman Series

The Lyman series consists of shallow, well-drained, gently undulating to steep soils of the uplands. These soils occur on ridges, mainly in Lexington, Concord, New Portland, Anson, Starks, and Embden Townships. They formed in glacial till and are underlain by schist bedrock.

In most cultivated areas Lyman soils have a brown loam surface layer about 5 inches thick. The subsoil is reddish-brown and brown loam about 13 inches thick. Schist bedrock is at a depth of about 18 inches.

Representative profile of Lyman loam, 0 to 8 percent slopes, in a field 5.2 miles north of the village of North Anson, on eastern side of Dunbar Hill Road:

Ap—0 to 5 inches, brown (10YR 4/3) loam; weak, fine, granular structure; friable; many roots; 15 percent coarse fragments; very strongly acid; abrupt, smooth boundary.
B21h—5 to 9 inches, reddish-brown (5YR 4/4) loam; weak, fine, granular structure; friable; many roots; 15 percent coarse fragments; strongly acid; clear, wavy boundary.
B22ir—9 to 18 inches, brown (7.5YR 4/4) loam; weak, fine, granular structure; friable; many roots; 15 percent coarse fragments; strongly acid.
R—18 inches, shattered bedrock.

The Lyman soils range from 10 to 20 inches in thickness. The Ap, B21h, and B22ir horizons are loam or fine sandy loam in texture. Coarse fragments make up 10 to 35 percent of these horizons. Reaction ranges from very strongly acid to medium acid. In color the B21h horizon ranges from dusky red (2.5YR 3/2) to strong brown (7.5YR 5/8), and the B22ir horizon from brown (7.5YR 4/4) and strong brown (7.5YR 5/8) to yellowish brown (10YR 5/8).

The Lyman soils occur with the Berkshire, Leicester, and Peru soils. Lyman soils are shallow and well drained, but the

Berkshire soils are deep and well drained, the Peru soils are deep and moderately well drained, and the Leicester soils are deep and poorly drained.

Lyman loam, 0 to 8 percent slopes (LyB).—This soil occupies gently undulating areas. It has the profile described as representative of the series. Depth to bedrock is 12 to 20 inches. Rock outcrops cover about 1 percent of the surface. Runoff is slow to moderate, permeability is moderate to moderately rapid, and the available moisture capacity is moderate.

This soil can be used for row crops, hay, pasture, and apple orchards. It is suited to corn, potatoes, oats, grasses, and legumes if lime and fertilizer are added in adequate amounts. Apple orchards need good management practices. (Capability subclass IIe; wildlife group 6; woodland group 4d1)

Lyman loam, 8 to 15 percent slopes (LyC).—This soil has moderate to moderately rapid runoff and permeability and is susceptible to erosion. Except for thinner layers, its profile is similar to the one described as representative of the series. Bedrock is at a depth of 10 to 16 inches, and rock outcrops cover about 2 percent of the surface.

Included with this soil in mapping are small areas of soils in which the underlying material is glacial till similar to that of the Berkshire soils.

This soil is suited to corn, potatoes, oats, and apples, and to grasses and legumes grown for hay and pasture. Lime and fertilizer are needed. Use of this soil for intertilled crops is difficult because of the irregular slopes and the rock outcrops. For row crops, practices are needed that conserve water and soil. (Capability subclass IIIe; wildlife group 6; woodland group 4d1)

Lyman very rocky loam, 0 to 15 percent slopes (LzC).—This soil has a thin layer of organic material over a layer of pinkish-gray loam that is 2 inches thick. Below this is a layer of dark reddish-brown loam about 3 inches thick. Depth to schist bedrock averages 12 to 14 inches. Runoff and permeability are moderate to moderately rapid.

Included with this soil in mapping are bare areas of rock that make up about 5 percent of each area mapped. Also included are areas of Berkshire soils that make up about 10 percent of the mapping unit.

Most of the acreage is in northern hardwoods. Because this soil varies in thickness and rock outcrops are numerous, its use is limited to pasture or trees. (Capability subclass VIs; wildlife group 8; woodland group 4x1)

Lyman very rocky loam, 15 to 45 percent slopes (LzE).—This soil occurs on the sides of ridges and slopes in mountainous areas. It is shallow to bedrock. A thin mat of organic material is over a pinkish-gray layer about 2 inches thick. Below this a layer of dark reddish-brown loam 1 to 3 inches thick. A few stones of schist and granite are on the surface.

Included with this soil in mapping are areas of soils that have very thin layers and in which rock crops out; these make up 5 to 15 percent of the area mapped. Also included are areas of a Berkshire very stony loam.

Because this soil varies in thickness, has numerous rock outcrops, and is steep, it is not suitable for farming and should be kept in trees. (Capability subclass VIIs; wildlife group 8; woodland group 4x1)

Madawaska Series

The Madawaska series consists of moderately well drained, nearly level to gently sloping soils that occur on terraces in the valleys of the Kennebec, Carrabassett, and Sandy Rivers and their tributaries. These soils formed in outwash material mainly derived from slate, shale, schist, and sandstone.

In most undisturbed areas the Madawaska soils have a thin layer of partly decayed leaves and twigs over a layer of gray fine sandy loam about 2 inches thick. The subsoil extends to a depth of about 28 inches and consists of yellowish-red, yellowish-brown, and light olive-brown fine sandy loam. The underlying material is olive-gray stratified sand that contains some gravel. Bedrock is at a depth of 6 feet or more. The water table is at a depth of 1½ feet during wet periods.

Representative profile of Madawaska fine sandy loam, 0 to 8 percent slopes, in a wooded area one-fourth mile south of Cornville-Canaan line, on the south side of road to Browns Corner:

O2—2 inches to 0, very dark brown, granular mor.
A2—0 to 2 inches, gray (10YR 6/1) fine sandy loam; weak, fine, granular structure; friable; many roots; strongly acid; abrupt, irregular boundary.
B21h—2 to 9 inches, yellowish-red (5YR 5/6) fine sandy loam; moderate, fine, granular structure; friable; roots common; strongly acid; clear, wavy boundary.
B22ir—9 to 19 inches, yellowish-brown (10YR 5/4) fine sandy loam; common, medium, distinct mottles of light brownish gray (10YR 6/2) and strong brown (7.5YR 5/6); weak, fine, granular structure; friable; few roots; strongly acid; clear, wavy boundary.
B3—19 to 28 inches, light olive-brown (2.5Y 5/4) fine sandy loam; common, coarse mottles of light brownish gray (10YR 6/2) and yellowish brown (10YR 5/4); single grain; loose; few roots; 10 percent fine gravel; strongly acid; clear, wavy boundary.
C—28 to 60 inches, intermingled light olive-gray (5Y 6/2) and dark olive-gray (5Y 3/2) stratified sand; single grain; loose; 10 percent fine gravel; medium acid.

The solum ranges from 18 to 32 inches in thickness and from very strongly acid to medium acid in reaction. Reaction ranges from strongly acid to medium acid in the substratum. In texture the A2, B21h, and B22ir horizons are fine sandy loam or sandy loam, and the B3 horizon ranges from fine sandy loam to loamy fine sand. The B21h horizon ranges from dark reddish brown (5YR 3/2) to strong brown (7.5YR 5/8). In cultivated areas the Ap horizon is dark grayish-brown fine sandy loam about 7 inches thick and the B21h horizon ranges from strong brown (7.5YR 5/8) to yellowish brown (10YR 5/8).

The Madawaska soils are associated with the Adams, Skowhegan, and Walpole soils. The Madawaska soils contain more gravel than the Adams soils. They are moderately well drained, but the Adams soils are excessively drained, and the Walpole soils are poorly drained.

Madawaska fine sandy loam, 0 to 8 percent slopes (MbB).—This soil has slow runoff, moderate to moderately rapid permeability, and high available moisture capacity. In cultivated areas the surface layer is dark grayish-brown fine sandy loam about 7 inches thick.

Included with this soil in mapping are a few areas of soils that contain gravel throughout the profile and areas of soils in which the gravel is at a depth of more than 28 inches. Also included are soils that have a firm layer at a depth of 28 inches or more and soils that have a loamy sand substratum.

This soil can be used for row crops, hay, and pasture.

It is suited to corn, oats, potatoes, grasses, and legumes if lime and fertilizer are added in adequate amounts. It can be drained by tile. The forest cover is mainly spruce, fir, pine, and a few northern hardwoods. (Capability subclass IIw; wildlife group 2; woodland group 3o1)

Melrose Series

The Melrose series consists of well-drained, nearly level to sloping soils that occur in the valleys of the Kennebec, Carrabassett, and Sandy Rivers. These soils formed in marine and lacustrine sediments.

A typical cultivated Melrose soil has a dark-brown fine sandy loam surface layer about 8 inches thick. The subsoil, about 15 inches thick, is dark yellowish-brown, light olive-brown, and olive fine sandy loam. The underlying material is olive silty clay loam. Bedrock is at a depth of 6 feet or more. Depth to the water table is 5 feet or more.

Representative profile of Melrose fine sandy loam, 3 to 8 percent slopes, in a field on south side of State Route 43, 1.2 miles east of Madison:

Ap—0 to 8 inches, dark-brown (10YR 4/3) fine sandy loam; moderate, medium, granular structure; friable; many roots; strongly acid; abrupt, smooth boundary.

B21h—8 to 13 inches, dark yellowish-brown (10YR 4/4) fine sandy loam; moderate, fine, granular structure; friable; roots common; strongly acid; clear, wavy boundary.

B22ir—13 to 19 inches, light olive-brown (2.5Y 5/4) fine sandy loam; weak, fine, granular structure; friable; roots common; strongly acid; clear, wavy boundary.

B3—19 to 23 inches, olive (5Y 5/3) fine sandy loam; weak, thin, platy structure; friable; few roots; strongly acid; clear, wavy boundary.

IIC1—23 to 31 inches, silty clay loam that is olive (5Y 5/3) outside of peds and is olive (5Y 4/3) inside of peds; strong, coarse, prismatic structure that breaks to moderate, medium, subangular blocky structure; firm; thin films of silt or clay on horizontal faces of peds; medium acid; clear, wavy boundary.

IIC2—31 to 60 inches, silty clay loam that is olive (5Y 5/3) outside of peds and is olive (5Y 4/3) inside of peds; strong, thick, platy structure; firm; thin films of silt on peds; medium acid.

The solum ranges from 18 to 36 inches in thickness. The B horizon ranges from loam to sandy loam, and the IIC horizon ranges from silty clay to silty clay loam. Reaction ranges from strongly acid to medium acid in the solum and from strongly acid to neutral in the IIC horizon.

The Melrose soils are associated with the Buxton and the Suffield soils. They have fine sandy loam texture to a depth of about 2 feet, but the Buxton and Suffield soils have silt loam texture to a depth of about 2 feet. The Melrose soils are well drained, but the Buxton soils are moderately well drained.

Melrose fine sandy loam, 3 to 8 percent slopes (MeB).—This soil has slow to medium runoff. Permeability is rapid in the surface layer and subsoil but is very slow in the underlying material. The available moisture capacity is moderate to high.

Included with this soil in mapping are small areas of nearly level soils. Also included are small areas of soils in which the silty clay loam underlying material is at a depth of about 12 inches. Other inclusions are areas of soils that are not so well drained as this soil.

Most of this soil is used for cultivated crops. It can be used for row crops, hay, and pasture. Suitable crops are corn, potatoes, oats, grasses, and legumes. Lime and fertilizer are needed. (Capability subclass IIe; wildlife group 1; woodland group 4o1)

Mixed Alluvial Land

Mixed alluvial land (0 to 3 percent slopes) (Mn) consists of silty and sandy material deposited in an intricate pattern on flood plains along narrow streams and in small areas near the Limerick and Winooski soils. It is subject to frequent flooding early in spring and is dominantly very poorly drained. The surface layer is mainly dark brown because of the high content of organic matter. The subsoil is mottled with yellowish brown and gray in some places. The texture of the soil material is variable throughout the profile. The surface layer is silt loam, loam, sandy loam, or sand, and the subsoil consists of coarse sand, silt, or fine sand or of thin layers of these materials. Variable amounts of undecomposed, coarse organic material occur throughout the profile. Reaction ranges from strongly acid to medium acid.

Most areas of this land are wooded, but some have been cleared and are in bluegrass pasture. Grazing is limited by excessive wetness, but artificial drainage lengthens the time that the pasture can be grazed and permits the use of heavy machines in pasture management. (Capability subclass VIw; wildlife group 9; woodland group not assigned)

Monarda Series

The Monarda series consists of poorly drained, nearly level to gently sloping soils of the uplands. These soils occur in nearly level areas, depressions, and seepage areas on ridges east of Skowhegan. They formed in silty glacial till derived mainly from slate, shale, and sandstone.

In most undisturbed areas Monarda soils have a thin layer of organic material over a very dark gray silt loam surface layer about 2 inches thick. Below this is a layer of mottled, olive-gray silt loam about 5 inches thick. The subsoil, about 16 inches thick, is mottled, olive silt loam. The underlying material is a fragipan of mottled, olive-gray, very firm silt loam glacial till. Stones are on the surface and in the soil. Bedrock is at a depth of 4 feet or more. The water table is at a depth of 1 foot or less.

Representative profile of Monarda very stony silt loam, in a wooded area in Cambridge on south side of State Route 150, one-fourth mile west of the Harmony town line:

O2—2 inches to 0, partly decomposed organic matter.

A1—0 to 2 inches, silt loam that is very dark gray (10YR 3/1) when moist and gray (10YR 6/1) when dry; strong, medium, granular structure; friable; many roots; 15 percent coarse fragments; strongly acid; abrupt, wavy boundary.

A2g—2 to 7 inches, olive-gray (5Y 5/2) silt loam; few, fine, faint mottles of olive yellow (5Y 6/6); weak, thin, platy structure; friable; many roots; 15 percent coarse fragments; strongly acid; abrupt, wavy boundary.

B2g—7 to 23 inches, olive (5Y 5/4) silt loam; common, medium, distinct mottles of light olive gray (5Y 6/2) and olive yellow (2.5Y 6/8); moderate, medium, subangular blocky structure that breaks to moderate, fine, granular structure; friable; few roots; 15 percent coarse fragments; few films of silt on peds; medium acid; clear, wavy boundary.

Cx—23 to 50 inches, olive-gray (5Y 5/2) silt loam; common, medium, faint mottles of gray (5Y 5/1), light olive gray (5Y 6/2), and olive yellow (5Y 6/8); weak, coarse, prismatic structure; very firm; few roots; 15 percent coarse fragments; slightly acid.

The solum ranges from about 18 to 30 inches in thickness. Reaction ranges from very strongly acid to medium acid in the solum and from strongly acid to neutral in the C horizon. Coarse fragments, mainly shale and phyllite, make up 15 to about 35 percent of the soil mass.

The Monarda soils are associated with the Bangor and Dixmont soils. They are poorly drained, but the Bangor soils are well drained, and the Dixmont soils are moderately well drained. All of these soils formed in similar kind of material.

Monarda silt loam (Mo).—This soil is nearly level to gently sloping and is poorly drained. It has a very dark grayish-brown silt loam surface layer about 6 inches thick; below this layer the profile of this soil is similar to the one described as representative of the series. Runoff is slow. Permeability is moderate to moderately rapid in the surface layer and subsoil and is slow in the very firm layer.

Included with this soil in mapping, in the vicinity of Brighton, are small areas of soils that have a layer of fine sandy loam 6 to 24 inches thick. Also included are small areas of Dixmont soils.

This soil can be used for row crops, hay, or pasture. It is suited to corn, oats, clover, and grass if fertilizer and lime are added in adequate amounts. (Capability subclass IIIw; wildlife group 3; woodland group 4w1)

Monarda very stony silt loam (Mr).—This soil is nearly level to gently sloping. It has the profile described as representative of the series. Flat fragments of shale, large, subrounded fragments of sandstone, and granitic stones cover from 0.3 to about 1 percent of the surface. Runoff is slow. Permeability is moderate to moderately rapid in the surface layer and subsoil and is slow below.

Included with this soil in mapping, in the vicinity of Brighton, are areas of soils that have very firm fine sandy loam glacial till underlying material. Also included are small areas of very poorly drained soils.

Nearly all of the acreage is woodland consisting mainly of spruce and fir. Windthrow is a hazard. (Capability subclass VIIsw; wildlife group 11; woodland group 4w1)

Peat and Muck

Peat and muck (0 to 3 percent slopes) (Pa) consists mostly of sphagnum moss and some reeds, sedges, and low shrubs that are in various stages of decomposition. The profile varies considerably. Decayed organic material, 2 or 3 feet thick, is over fibrous material in some places, and in other places a layer of mucky material, 1 to 1½ feet thick, overlies partly decayed organic material. The water table is 1 foot or less from the surface. (Capability subclass VIIw; wildlife group 14; woodland group not assigned)

Peru Series

The Peru series consists of moderately well drained, nearly level to moderately sloping soils of the uplands. These soils occur on ridges, mainly in Concord, Lexington, Embden, Anson, Starks, and New Portland Townships. They occupy seepage areas, depressions, and the lower part of long, smooth slopes. These soils formed in glacial till derived from schist.

In most cultivated areas the Peru soils have a plow layer of dark grayish-brown loam about 7 inches thick. Below this layer is dark-brown loam and yellowish-brown fine sandy loam that is about 12 inches thick and is mottled in the lower 8 inches. The next layer is mottled, light olive-brown, firm fine sandy loam about 7 inches thick. Between depths of 26 and 50 inches is a fragipan of olive gravelly fine sandy loam glacial till that is very firm and brittle. Bedrock is at a depth of 4 feet or more. The water table is at a depth of 1½ feet during wet periods.

Representative profile of Peru loam, 0 to 8 percent slopes, in a field in Embden, 0.75 mile north of Emerson School on eastern side of State Route 16:

Ap—0 to 7 inches, dark grayish-brown (10YR 4/2) loam; moderate, medium, granular structure; friable; many roots; 10 percent coarse fragments; strongly acid; abrupt, smooth boundary.

B21h—7 to 11 inches, dark-brown (7.5YR 4/4) loam; moderate, fine, granular structure; friable; roots common; 10 percent coarse fragments; strongly acid; clear, wavy boundary.

B22ir—11 to 19 inches, yellowish-brown (10YR 5/6) fine sandy loam; common, medium, prominent mottles of grayish brown (10YR 5/2) and dark reddish brown (5YR 3/4); weak, fine, granular structure; friable; few roots; 15 percent coarse fragments; strongly acid; clear, wavy boundary.

B3—19 to 26 inches, light olive-brown (2.5Y 5/4) fine sandy loam; common, medium, distinct mottles of light brownish gray (10YR 6/2) and light yellowish brown (2.5Y 6/4); moderate, medium, platy structure; firm; few roots; 15 percent coarse fragments; medium acid; clear, wavy boundary.

Cx—26 to 50 inches, olive (5YR 5/4) gravelly fine sandy loam; few, fine, faint mottles of gray and yellowish brown; massive; very firm and brittle; 30 percent coarse fragments; medium acid.

The solum ranges from 18 to 32 inches in thickness. Reaction ranges from very strongly acid to medium acid in the solum and from strongly acid to medium acid in the C horizon. Coarse fragments make up from 10 to 35 percent of the soil mass. In color the B21h horizon ranges from very dark grayish brown (2.5Y 3/2) to strong brown (7.5YR 5/8) and the B22ir horizon ranges from strong brown (7.5YR 5/6) to light olive brown (2.5Y 5/4).

The Peru soils are associated with the Berkshire and Leicester soils. They formed in material similar to that in which the Berkshire and Leicester soils formed. Peru soils are moderately well drained, but the Berkshire soils are well drained and the Leicester soils are poorly drained.

Peru loam, 0 to 8 percent slopes (PcB).—This soil occurs mainly at the base of long slopes. It has the profile described as representative of the series. Runoff is medium to rapid. Permeability is moderate above the fragipan and is moderately slow to slow in the fragipan. A few boulders are partly embedded in the surface layer in many places.

Included with this soil in mapping are small areas of soils having slopes of more than 8 percent and small areas of soils that do not contain a firm and brittle layer in their profile. Also included are a few small areas of Leicester soils.

This soil can be used for row crops, hay, pasture, and apple orchards. Suitable crops are corn, potatoes, oats, grasses, and legumes if lime and fertilizer are added in adequate amounts. (Capability subclass IIw; wildlife group 2; woodland group 3o1)

Peru very stony loam, 0 to 8 percent slopes (PdB).—This soil has a profile similar to the one described as representative of the series, except that it has a layer of

organic material about 3 inches thick over a 2-inch grayish-brown layer, and the next layer is dark reddish brown and about 4 inches thick. Fragments of schist and granitic stones and a few granitic boulders cover about 2 percent of the surface. Permeability is moderate above the fragipan and is moderately slow to slow in the fragipan. The mottles are nearer the surface in the nearly level areas than in the more sloping areas.

Included with this soil in mapping are a few areas of a Peru soil that has only 1 percent of the surface covered by stones and has a thinner organic surface layer than that of this soil.

Wetness and stoniness limit the use of this soil for farming other than for permanent pasture (fig. 11). Most of the acreage is in mixed hardwoods, spruce, and fir. (Capability subclass VIs; wildlife group 12; woodland group 3o1)

Peru very stony loam, 8 to 15 percent slopes (PdC).—This soil is on the sides of ridges. It has, on the surface, a thin layer of organic material over light-gray loam about 2 inches thick. Below this is a layer that is yellowish red and about 3 inches thick. The underlying layers are slightly thinner than the corresponding layers in the profile described as representative of the series. About 2 percent of the surface is covered by fragments of schist and granitic stones and granitic boulders. Permeability is moderate above the fragipan and is moderately slow to slow in the fragipan.

Included with this soil in mapping are small areas of soils that are shallow to bedrock and have a few rock outcrops. Also included are a few areas that have only a few stones on the surface.

This soil is too stony and wet for farming other than permanent pasture. Pasture management should include practices that control erosion. The forest cover is mainly mixed stands of spruce, fir, and northern hardwoods. (Capability subclass VIs; wildlife group 12; woodland group 3o1)

Plaisted Series

The Plaisted series consists of well-drained, gently sloping to moderately steep soils of the uplands. These soils formed in compact glacial till derived from shale, sandstone, and granite. They occur on ridges, mainly in

Figure 11.—Typical area of Peru very stony loam, 0 to 8 percent slopes.

the vicinity of Brighton, but they also occupy ridges in the east-central part of the survey area.

A typical cultivated Plaisted soil has a dark grayish-brown gravelly loam plow layer about 7 inches thick. The subsoil, about 16 inches thick, is dark-brown and yellowish-brown, friable gravelly loam in the uppermost 8 inches and is light olive-brown gravelly fine sandy loam below. The underlying material is a fragipan of olive-gray gravelly sandy loam that is very firm and brittle. Bedrock is at a depth of 5 feet or more. The water table is 4 feet or more below the surface.

Representative profile of Plaisted gravelly loam, 3 to 8 percent slopes, in a field on the eastern side of State Route 151, 2 miles north of Brighton:

Ap—0 to 7 inches, dark grayish-brown (10YR 4/2) gravelly loam; moderate, medium, granular structure; friable; many roots; 30 percent coarse fragments; strongly acid; abrupt, smooth boundary.

B21h—7 to 11 inches, dark-brown (7.5YR 4/4) gravelly loam; moderate, medium, granular structure; friable; roots common; 30 percent coarse fragments; strongly acid; clear, wavy boundary.

B22ir—11 to 15 inches, yellowish-brown (10YR 5/6) gravelly loam; weak, fine, granular structure; friable; roots common; 30 percent coarse fragments; strongly acid; clear, wavy boundary.

B3—15 to 23 inches, light olive-brown (2.5Y 5/4) gravelly fine sandy loam; moderate, medium, platy structure; firm; few roots; 30 percent coarse fragments; strongly acid; clear, wavy boundary.

Cx—23 to 60 inches, olive-gray (5Y 5/2) gravelly sandy loam; massive; very firm when moist, brittle when dry; 35 percent coarse fragments; strongly acid.

The solum ranges from 14 to 24 inches in thickness. Below this depth the soil is firm to extremely firm and compact. The reaction ranges from very strongly acid to strongly acid throughout the profile. In undisturbed areas the B21h horizon ranges from dusky red (2.5YR 3/2) to strong brown (7.5YR 5/8), the B22ir from dark reddish brown (5YR 3/4) to yellowish brown (10YR 5/8), and the B3 from yellowish brown (10YR 5/4) to light olive brown (2.5Y 5/4).

The Plaisted soils are associated with the Dixmont and Monarda soils. They are well drained, but the Dixmont soils are moderately well drained, and the Monarda soils are poorly drained.

Plaisted gravelly loam, 3 to 8 percent slopes (PgB).—This soil is on the upper part of ridges. It has the profile described as representative of the series. Runoff is medium, and permeability is moderate above the fragipan and is slow in the fragipan.

Included with this soil in mapping are a few areas of nearly level soils that have a thicker surface layer than this soil. Also included are small areas of soils that are not so well drained as this soil. Other inclusions, in the vicinity of Hartland, are a few acres of soils that have a silt loam surface layer.

This soil can be used for row crops, hay, or pasture. It is suited to corn, potatoes, sugar beets, oats, grasses, and legumes if lime and fertilizer are applied. This soil can also be used for apple orchards, but the very firm glacial till underlying material restricts the penetration of roots. (Capability subclass IIe; wildlife group 1; woodland group 4d1)

Plaisted gravelly loam, 8 to 15 percent slopes (PgC).—This soil occurs on the sides of long ridges. The slopes extend in one general direction in most places. Except for a slightly thinner surface layer, the profile of this soil is similar to the one described as representative of the series. Runoff is rapid, and permeability is moderate above the fragipan and is slow in the fragipan.

Included with this soil in mapping are soils that have a brown surface layer, and depth to very firm glacial till is only about 10 inches. Also included are long, narrow seepage areas, and, in the vicinity of Hartland, areas of a soil that has a silt loam surface layer.

This soil can be used for row crops, hay, or pasture. It can be used for apple orchards, but the penetration of roots is restricted by the very firm glacial till. Suitable crops are corn, potatoes, sugar beets, oats, grasses, and legumes if lime and fertilizer are added. (Capability subclass IIIe; wildlife group 1; woodland group 4d1)

Plaisted very stony loam, 3 to 8 percent slopes (PrB).—This soil occupies wooded areas on the upper part of ridges. It has a mat of organic material about 2 inches thick over a gray loam surface layer about 2 inches thick. Except for a thicker subsoil, the profile of this soil is similar to the one described as representative of the series. As much as 3 percent of the surface is covered by fragments of shale, slate, and sandstone and by granitic stones and boulders. Permeability is moderate above the fragipan and is slow in the fragipan.

Included with this soil in mapping are a few small areas of nearly level soils. Also included, in the vicinity of Hartland, are areas of soils that have a gravelly silt loam surface layer.

Most of this soil is forested, mainly with northern hardwoods. Tree roots penetrate to a depth of only 18 to 24 inches. This soil is too stony to be used for farming purposes other than permanent pasture. (Capability subclass VIs; wildlife group 7; woodland group 4d1)

Plaisted very stony loam, 8 to 15 percent slopes (PrC).—This soil is on the side of ridges. It has a thin mat of organic material over a gray loam surface layer about 2 inches thick. A fragipan is about 16 inches below the surface. Except for thinner layers above the fragipan, the profile of this soil is similar to the one described as representative of the series. Stones and boulders cover as much as 3 percent of the surface. Runoff is medium, and permeability is moderate above the fragipan and is slow in the fragipan. Roots seldom enter this impervious layer to a depth of more than 2 inches.

Included with this soil in mapping, in the vicinity of Hartland, are areas of a soil that has a gravelly silt loam surface layer.

Because of stoniness, this soil should be used for permanent pasture or trees. If it is used for pasture, practices are needed for slowing runoff and controlling soil losses. The forest cover is mainly northern hardwoods. (Capability subclass VIs; wildlife group 7; woodland group 4d1)

Plaisted very stony loam, 15 to 25 percent slopes (PrD).—This soil generally occurs on the face of ridges above the streams. It has a thin mat of organic material over a gray loam surface layer about 1 or 2 inches thick. Runoff is rapid, and permeability is moderate above the fragipan and is slow in the fragipan. Stones and boulders cover as much as 3 percent of the surface. Rock crops out in a few places.

Included with this soil in mapping are areas of soils that have a very firm glacial till less than 12 inches below the surface. Also included, in the vicinity of Hartland,

are areas of a soil that has a surface layer of gravelly silt loam. Other inclusions are a few areas of soils that have slopes of more than 25 percent.

This soil is too steep and stony for farming purposes other than permanent pasture. Because of the slope and rapid runoff, it is difficult to manage even for pasture. Northern hardwoods are the principal trees. (Capability subclass VIs; wildlife group 8; woodland group 4d2)

Rock Land

Rock land consists of areas where bedrock crops out on 25 to 90 percent of the surface and the soil material is very shallow.

Rock land, Thorndike and Lyman materials, 0 to 15 percent slopes (RtC).—About 50 percent of this mapping unit is Rock land, and the rest is very shallow soil material. In the northwestern part of the survey area, the soil material resembles that of the Lyman soils, and that in the remaining part resembles the Thorndike soils. The areas of rock outcrops are nearly bare. Except for thinner layers, the profile of each soil is similar to the profile described as representative of the Thorndike and of the Lyman series. Runoff is rapid. (Capability subclass VIIIs; wildlife group 13; woodland group 6x1)

Rock land, Thorndike and Lyman materials, 15 to 45 percent slopes (RtE).—About 25 to 90 percent of this mapping unit is Rock land, and the rest is very shallow soil material. In the northwestern part of the survey area, the soil material resembles that of the Lyman soils, and that in the remaining areas resembles the Thorndike soils. Except for thinner layers, the profile of each soil is similar to the profile described as representative of the Thorndike series and of the Lyman series. Runoff is rapid. (Capability subclass VIIIs; wildlife group 13; woodland group 6x1)

Scantic Series

The Scantic series consists of poorly drained, nearly level to slightly undulating soils that occur on swales and plains in the southeastern corner of the survey area and in the valley of the Kennebec River. These soils formed in marine and lacustrine sediments.

In most cultivated areas the Scantic soils have a dark grayish-brown silt loam surface layer about 9 inches thick and a subsurface layer of olive-gray, mottled silt loam about 4 inches thick. The subsoil extends to a depth of about 33 inches; the uppermost 4 inches is olive-gray, mottled silt loam, and the lower part is olive-gray, mottled silty clay loam. The underlying material is olive-gray mottled clay. Bedrock is at a depth of 6 feet or more. The water table is at a depth of 1 foot or less during the wettest periods.

Representative profile of Scantic silt loam in a field on eastern side of State Route No. 23, 1.4 miles south of Canaan:

Ap—0 to 9 inches, dark grayish-brown (10YR 4/2) silt loam; weak, fine, granular structure; friable; many roots; strongly acid; abrupt, smooth boundary.

A2g—9 to 13 inches, olive-gray (5Y 5/2) silt loam; few, medium, distinct mottles of olive brown (2.5Y 4/4); moderate, medium, granular structure; friable; many roots; medium acid; clear, broken boundary.

B21g—13 to 17 inches, olive-gray (5Y 5/2) silt loam; common, fine, distinct mottles of olive brown (2.5Y 4/4); moderate, medium, blocky structure; firm; few roots; medium acid; abrupt, smooth boundary.

IIB22g—17 to 25 inches, olive-gray (5Y 5/2) silty clay loam; common, fine, distinct mottles of yellowish brown (10YR 5/8); moderate, medium, blocky structure; firm; thin clay films on peds; medium acid; gradual, wavy boundary.

IIB23g—25 to 28 inches, olive-gray (5Y 5/2) silty clay loam; few, fine, faint mottles of olive (5Y 5/4); moderate, thin, platy structure; firm; thin clay films on peds; medium acid; gradual, wavy boundary.

IIB24g—28 to 33 inches, olive-gray (5Y 4/2) silty clay loam; few, fine, faint mottles of gray (5Y 5/1); moderate, medium, platy structure; firm; dark-gray (5Y 4/1) coatings on ped faces; medium acid; clear, wavy boundary.

IIC—33 to 60 inches, olive-gray (5Y 4/2) clay; few, fine, distinct mottles of brown to dark brown (10YR 4/3); very weak, medium and thick, platy structure; firm; dark-gray (5Y 4/1) coatings on ped faces; medium acid.

The combined thickness of the Ap, A2g, and B21g horizons ranges from 15 to 24 inches. Reaction ranges from strongly acid to medium acid in the solum and from medium acid to neutral in the IIC horizon.

The Scantic soils are associated with the Biddeford, Buxton, and Suffield soils, and they formed in material similar to that in which those soils formed. The Scantic soils are poorly drained, but the Biddeford soils are very poorly drained, the Buxton soils are moderately well drained, and the Suffield soils are well drained.

Scantic silt loam (Sc).—In most areas this soil has slopes of less than 3 percent that extend in one general direction. Runoff is slow. Permeability is moderately slow in the surface layer and subsoil and is very slow in the underlying material. This soil is wet for long periods and is very slow to warm in spring. Natural fertility is low. The clayey underlying material restricts the penetration of roots.

Included with this soil in mapping are small areas of soils that have a fine sandy loam surface layer. Also included are small areas of soils that have a thin, mucky surface layer and small areas of moderately well drained soils.

This soil is suited to adapted hay and pasture plants. Lime and fertilizer are needed. (Capability subclass IVw; wildlife group 3; woodland group 5w1)

Skowhegan Series

The Skowhegan series consists of moderately well drained, nearly level to gently undulating soils that occur on terraces in the valleys of the Kennebec, Carrabassett, and Sandy Rivers. These soils formed in thick, sandy deposits.

A typical uncultivated Skowhegan soil has a 2-inch layer of dark-colored organic material over about 5 inches of dark-brown and light brownish-gray loamy fine sand. Below this is yellowish-red and dark yellowish-brown loamy fine sand that extends to a depth of about 18 inches. The underlying material is olive-brown, dark-gray, and gray loamy sand and sand between depths of 18 and 60 inches. Depth to bedrock is 5 feet or more. The water table is within 1½ or 2 feet of the surface during the wettest periods, but the permanent water table is at a depth of 5 to 8 feet.

Representative profile of Skowhegan loamy fine sand in a field 200 yards south of an abandoned barn along

paved road, one-half mile south of State Route 148 and one-fourth mile east of Madison:

O2—2 inches to 0, dark reddish-brown (5YR 2/2) organic material; moderate, very fine, granular structure; very friable; many roots; few polished grains of sand; very strongly acid; abrupt, smooth boundary.

A1—0 to 2 inches, dark-brown (7.5YR 3/2) loamy fine sand; weak to moderate, fine, granular structure; very friable; many roots; strongly acid; abrupt, smooth boundary.

A2—2 to 5 inches, light brownish-gray (10YR 6/2) loamy fine sand; weak, fine to medium, granular structure; friable; few to common roots; very strongly acid; abrupt, smooth boundary.

B21h—5 to 11 inches, yellowish-red (5YR 4/6) loamy fine sand; weak, fine, granular structure; friable; many roots; few, slightly firm, dark reddish-brown (5YR 3/2) concretions that are ¼ to ½ inch in diameter; nearly all sand grains are coated; strongly acid; clear, wavy boundary.

B22ir—11 to 18 inches, dark yellowish-brown (10YR 4/4) loamy fine sand; common, medium, distinct mottles of gray (10YR 5/1), brown (10YR 5/3), and yellowish red (5YR 5/8); weak, fine to medium, granular structure; friable; few roots; few slightly firm concretions that are ¼ to ½ inch in diameter and have reddish-brown (5YR 4/4) interiors; strongly acid; gradual, irregular boundary.

C1—18 to 30 inches, fine and medium loamy sand; olive brown (2.5Y 4/4) grading to olive (5Y 5/4) in the lower part of horizon; few, fine, distinct mottles of yellowish red (5YR 5/8) in upper part of horizon, and common, medium, distinct mottles of dark brown (7.5YR 4/4) and grayish brown (2.5Y 5/2) in lower part of horizon; very weak, medium, granular structure that breaks to single grain; friable; slightly compact in place; no roots; strongly acid; gradual, wavy boundary.

C2g—30 to 60 inches, dark-gray (5Y 4/1) to gray (5Y 5/1) medium sand; common, fine, distinct mottles of grayish brown (2.5YR 5/2); single grain; slightly compact in place; few lenses, ½ inch to 3 inches in diameter, of gray (5Y 5/1) silt and very fine sand occur near top of the horizon; strongly acid.

The solum ranges from 15 to 24 inches in thickness. In color the A1 horizon ranges from dark brown (7.5YR 3/2) to dark grayish brown (10YR 4/2), the B22ir horizon from dark yellowish brown (10YR 4/4) to light olive brown (2.5Y 5/4), and the B21h horizon from yellowish red (5YR 4/6) to dark yellowish brown (10YR 4/4). Reaction ranges from very strongly acid to strongly acid in the A and B horizons and from strongly acid to medium acid in the C horizon. The consistence is very friable, friable, or loose, except that a few small cemented concretions of iron or humus are in the B21h horizon in some places.

The Skowhegan soils are associated with the Adams, Madawaska, and Walpole soils. They are coarser textured than the Madawaska soils. The Skowhegan soils are moderately well drained, but the Adams soils are excessively drained, and the Walpole soils are poorly drained.

Skowhegan loamy fine sand (Sk).—In cultivated areas this soil has a surface layer of dark grayish-brown loamy fine sand about 7 inches thick. Runoff is slow to medium, and permeability generally is rapid. The water table is seasonally high, and it may change the rate that water moves into the underlying material. The available moisture capacity is moderate. This soil is wet early in spring and in fall, which may delay the planting and harvesting of crops.

Included with this soil in mapping are small areas of soils that have firm underlying material and small areas of a soil that has a sandy loam surface layer. Also included are a few small areas of soils that have bands of silt throughout the profile. Other inclusions, in the vicinity of Madison and of Solon, are areas that have a few stones on the surface.

This soil can be used for corn, sugar beets, oats, legumes, and grasses if lime and fertilizer are added in adequate amounts. Tile drains improve plant growth on this soil. (Capability subclass IIw; wildlife group 2; woodland group 3o1)

Stetson Series

The Stetson series consists of well-drained, nearly level to sloping soils that occur on terraces and in areas of glacial outwash in the valleys of the Kennebec, Carrabassett, and Sandy Rivers. These soils formed in stratified sands and gravel derived mainly from slate, shale, and sandstone.

In most cultivated areas the Stetson soils have a brown fine sandy loam surface layer about 6 inches thick. The subsoil, about 15 inches thick, consists of yellowish-red fine sandy loam, dark-brown gravelly fine sandy loam, and yellowish-brown gravelly sandy loam. Stratified sand and gravel is at a depth of about 21 inches. Depth to bedrock is 6 feet or more. The water table is seldom at a depth of less than 5 feet.

Representative profile of Stetson fine sandy loam, 0 to 8 percent slopes, in a cultivated field near Embden, on eastern side of Alternate State Route 201, 0.5 mile east of dead end road:

Ap—0 to 6 inches, brown (10YR 4/3) fine sandy loam, moderate, medium, granular structure; friable; many roots; 10 percent fine gravel; strongly acid; abrupt, smooth boundary.

B21h—6 to 8 inches, yellowish-red (5YR 4/6) fine sandy loam; moderate, medium, granular structure; friable; many roots; 10 percent fine gravel; strongly acid; clear, wavy boundary.

B22ir—8 to 15 inches, dark-brown (7.5YR 4/4) gravelly fine sandy loam; weak, fine, granular structure; friable; many roots; 20 percent fine gravel; strongly acid; clear, wavy boundary.

B3—15 to 21 inches, yellowish-brown (10YR 5/4) gravelly sandy loam; friable; few roots; 30 percent fine gravel; strongly acid; clear, wavy boundary.

C—21 to 60 inches, intermingled dark olive-gray (5Y 3/2) and olive (5Y 5/3) stratified sand and gravel; single grain; loose; 40 percent medium and fine gravel; medium acid.

The A and B horizons combined range from 18 to 24 inches in thickness. The B21h horizon ranges from dusky red (2.5YR 3/2) to strong brown (7.5YR 5/8) in color, and its texture includes loam, fine sandy loam, and sandy loam. The B22ir horizon ranges from dark reddish brown (5Y 3/4) to yellowish brown (10YR 5/8) and includes textures of fine sandy loam, gravelly fine sandy loam, sandy loam, and gravelly sandy loam. The B3 horizon ranges from yellowish brown (10YR 5/4) to light olive brown (2.5Y 5/4), and its texture includes sandy loam, loamy sand, gravelly sandy loam, and gravelly loamy sand. The content of gravel increases with depth. It ranges from about 5 to 35 percent in the A and B horizons and from 35 to 60 percent in the C horizon. Reaction ranges from strongly acid to medium acid in the A and B horizons. The C horizon generally is medium acid, but it is slightly acid in a few places. Some gravel in the lower part of the C horizon has calcareous coats.

The Stetson soils are associated with the Colton and Walpole soils, all of which formed in a similar kind of material. The Stetson soils are well drained, but the Colton soils are excessively drained, and the Walpole soils are poorly drained.

Stetson fine sandy loam, 0 to 8 percent slopes (StB).—This soil has slow runoff and rapid permeability. The available moisture capacity is moderate.

This soil can be used for row crops, hay, pasture, and apple orchards. It is suited to corn, potatoes, sugar beets, oats, legumes, and grasses if lime and fertilizer are added. Irrigation may be needed in dry periods. (Capability subclass IIe; wildlife group 1; woodland group 4s1)

Suffield Series

The Suffield series consists of well-drained, sloping to steep soils that occur on dissected benches and terraces along the Kennebec, Carrabassett, and Sandy Rivers and their tributaries. The slopes extend in two or more directions (fig. 12). These soils formed in marine and lacustrine deposits of silt and clay.

In most cultivated areas a typical eroded Suffield soil has a surface layer of dark grayish-brown silt loam about 6 inches thick. The subsoil is strong-brown and light olive-brown silt loam to a depth of about 21 inches and is olive silty clay loam between depths of 21 and 32 inches. The underlying material is olive and olive-gray silty clay loam. Bedrock is at a depth of 5 feet or more. The water table is at a depth of 60 inches or more.

Representative profile of Suffield silt loam, 8 to 15 percent slopes, eroded, in a field on eastern side of State Route 150, 1 mile north of Skowhegan:

Ap—0 to 6 inches, dark grayish-brown (10YR 4/2) silt loam; weak, fine, granular structure; friable; many roots; medium acid; abrupt, smooth boundary.

B21h—6 to 12 inches, strong-brown (7.5YR 5/8) silt loam; weak, fine and medium, granular structure; friable; many roots; medium acid; abrupt, smooth boundary.

B22—12 to 16 inches, light olive-brown (2.5Y 5/6) silt loam; weak, fine, granular structure; friable; common roots; medium acid; clear, wavy boundary.

B23—16 to 21 inches, light olive-brown (2.5Y 5/4) silt loam; weak, thin, platy structure; friable; few roots; slightly acid; clear, irregular boundary.

IIB3—21 to 32 inches, olive (5Y 5/3) silty clay loam; coarse, prismatic structure formed by polygon faces; olive (5Y 5/6) silt loam, 1 millimeter thick, in cracks adjacent to prism faces; olive-gray (5Y 5/2) silt loam, 2 millimeters thick, in center of cracks; tops of polygons are in this horizon; moderate, medium, subangular blocky structure in interior of prisms; thin clay films on vertical faces of blocky peds; firm; slightly acid; clear, wavy boundary.

IIC—32 to 60 inches, silty clay loam; olive (5Y 4/3) in ped interiors, olive gray (5Y 5/2 on ped faces: weak, very thick, platy structure that breaks to subangular blocky structure; very firm; neutral; brown stains and coats of silt.

The profile is silt loam to a depth of about 18 to 35 inches. Reaction ranges from strongly acid to slightly acid in the A and B horizons and from medium acid to neutral in the C horizon.

The Suffield soils are associated with the Buxton and Scantic soils, all of which formed in a similar kind of material. The Suffield soils are well drained, but the Buxton soils are moderately well drained and the Scantic soils are poorly drained.

Suffield silt loam, 8 to 15 percent slopes, eroded (SuC2).—This soil has rapid runoff and high available moisture capacity. It is very susceptible to erosion. Permeability is moderate in the upper part of the profile and is slow in the underlying material. This soil has the profile described as representative of the series.

Included with this soil in mapping are small areas of gently sloping soils that have slightly thicker silty layers than corresponding layers in this soil. Also included are a few areas of soils that have a fine sandy loam surface layer.

This soil can be used for row crops, hay, and pasture. Suitable crops are corn, oats, grasses, and legumes. Lime and fertilizer are needed. (Capability subclass IIIe; wildlife group 10; woodland group 5c1)

Suffield silt loam, 15 to 25 percent slopes, eroded (SuD2).—This soil occupies slopes that face the rivers and smaller streams and extend in two or more directions. Except for a somewhat thinner surface layer and subsoil, the profile of this soil is similar to the one described as representative of the series. Runoff is rapid, and permeability is moderate to slow. The hazard of erosion is very severe.

Included with this soil in mapping are spots of Suffield soils that are so severely eroded that the underlying material is exposed.

This soil is suited to permanent pasture. A row crop can be grown occasionally. Intensive practices are needed for controlling soil losses and conserving moisture. (Capability subclass IVe; wildlife group 10; woodland group 5c2)

Thorndike Series

The Thorndike series consists of shallow, well-drained and excessively drained soils that formed in glacial till on ridges. Except west and southwest of Bingham, these soils occur in most of the survey area.

A typical wooded Thorndike soil has a thin layer of organic material over a layer of gray silt loam about 2 inches thick. The subsoil, about 16 inches thick, is dark reddish-brown, strong-brown, and yellowish-brown silt loam. Shale bedrock is at a depth of about 18 inches.

Representative profile of Thorndike very rocky silt loam, 3 to 15 percent slopes, in a wooded area, 1.8 miles northwest of St. Albans, on the western side of road to radio tower:

O2—2 inches to 0, very dark brown, granular mor.

A2—0 to 2 inches, gray (10YR 6/1) silt loam; weak, fine, granular structure; friable; many roots; 5 percent flat fragments of shale; strongly acid; abrupt, irregular boundary.

B21h—2 to 5 inches, dark reddish-brown (5YR 3/2) silt loam; moderate, medium, granular structure; friable; roots common; 10 percent thin, flat fragments of shale; strongly acid; clear, wavy boundary.

B22ir—5 to 10 inches, strong-brown (7.5YR 5/8) silt loam; moderate, fine, granular structure; friable; roots common; 15 percent thin, flat fragments of shale; medium acid; clear, wavy boundary.

B23—10 to 18 inches, yellowish-brown (10YR 5/8) silt loam; weak, fine, granular structure; friable; roots common; 15 percent thin, flat fragments of shale; medium acid.

R—18 inches +, shale bedrock.

Reaction ranges from strongly acid to medium acid in the solum. Coarse fragments, mainly of slate and shale, make up 5 to 35 percent of the soil mass. Depth to bedrock ranges from about 10 to 20 inches.

The Thorndike soils occur with the Bangor, Dixmont, and Monarda soils on ridges east of Skowhegan and with the

Figure 12.—Typical area of a Suffield silt loam. Small areas of a Buxton soil are at the base of slopes in the middle foreground.

Plaisted soils northeast of Skowhegan in the vicinity of Brighton. The Thorndike soils lack the fragipan that is typical for the Plaisted soils. They are shallow to bedrock, but the Bangor and Plaisted soils are deep to bedrock. The Thorndike soils are well drained, but the Dixmont soils are moderately well drained, and the Monarda soils are poorly drained.

Thorndike very rocky silt loam, 3 to 15 percent slopes (TkC).—This soil has medium runoff and moderate permeability. It has the profile described as representative of the series.

Included with this soil in mapping are areas of soils that are less than 10 inches thick; they make up about 15 percent of the area mapped. Also included are pockets of wet soils that are underlain by bedrock. Other inclusions are small areas of Bangor soils and of Plaisted soils.

Northern hardwoods, spruce, and fir grow on most of this soil. A part of the acreage is used for permanent pasture, but pasture management is difficult because rock outcrops are numerous. (Capability subclass VIs; wildlife group 8; woodland group 4x1)

Thorndike very rocky silt loam, 15 to 30 percent slopes (TkD).—This soil is rolling and is excessively drained in most places but is well drained in some places. It has medium to rapid runoff and moderate permeability. Except for a slightly thinner subsoil, the profile of this soil is similar to the one described as representative of the series. In most places bedrock is at a depth of 10 to 8 inches.

Included with this soil in mapping are a few small areas of Bangor soils and of Plaisted soils. Also included are areas of soils in which bedrock is at a depth of less than 10 inches; these soils make up about 20 percent of each area mapped. Other inclusions are seepage spots, small wet areas, and long, narrow wet areas.

Most of the acreage is in northern hardwoods, spruce, and fir. This soil can be used for permanent pasture, but pasture management is difficult because rock outcrops are

numerous. (Capability subclass VIs; wildlife group 8; woodland group 4x1)

Thorndike-Bangor silt loams, 0 to 8 percent slopes (TtB).—This complex occurs mainly east of Skowhegan. From 40 to 60 percent of any one area is Thorndike silt loam, and most of the rest is Bangor silt loam. The Thorndike soil occurs mainly on the crests of gently undulating ridges, and the Bangor soil is in depressions between knolls. The profiles of these soils are similar to the profiles described as representative of the Thorndike and Bangor series. The Thorndike soil is about 16 inches thick in most places, but outcrops of bedrock cover about 1 percent of the area mapped. The Thorndike soil and the Bangor soil have medium runoff and moderate permeability. The available moisture capacity is moderate for the Thorndike soil and is high for the Bangor soil.

Except in the very shallow spots and where rock crops out, the soils in this complex are easy to work. Plowing and planting are sometimes delayed in spring in a few low, wet spots.

Some areas of this complex are among the most intensively farmed areas in this survey area. Dairying is the main enterprise, but some areas are used for row crops and apple orchards. Yields vary because these soils vary in thickness. (Capability subclass IIe; wildlife group 6; woodland group 3o1)

Thorndike-Bangor silt loams, 8 to 15 percent slopes (TtC).—About 40 to 60 percent of this complex is Thorndike silt loam, and 30 to 60 percent is Bangor silt loam. These soils occur in such intricate patterns that they were not separated in mapping, and they are managed in the same way. Each kind of soil has a profile similar to that described as representative of its series. Bedrock is at a depth of about 14 inches in the Thorndike soil. Both soils have medium runoff and moderate permeability. The Thorndike soil has moderate available moisture capacity.

Included with this complex in mapping are shallow spots, rock outcrops, and small wet areas. These inclusions make up about 10 percent of the complex.

The soils of this complex can be used for row crops, hay, pasture, or apple orchards. They are suited to corn, potatoes, oats, sugar beets, grasses, and legumes if lime and fertilizer are added in adequate amounts. (Capability subclass IIIe; wildlife group 6; woodland group 3o1)

Thorndike-Bangor silt loams, 15 to 30 percent slopes (TtD).—The Thorndike soil makes up more than half of this complex, and the Bangor soil accounts for most of the rest. Except that shale bedrock is at a depth of 12 to 14 inches, this Thorndike soil has a profile similar to the one described as representative of the series. The Bangor soil has a thinner surface layer and subsoil than corresponding layers in the profile described for the Bangor series. Runoff is rapid and permeability is moderate in both soils. The Thorndike soil has moderate available moisture capacity.

Included with this complex in mapping are shallow spots, rock outcrops, and small wet areas. These inclusions make up about 5 percent of the complex.

Because of the slope, the soils in this complex are better suited to hay and pasture than to cultivated crops. (Capability subclass IVe; wildlife group 8; woodland group 3r1)

Thorndike-Plaisted loams, 0 to 8 percent slopes (TpB).—This complex consists of Thorndike loam and Plaisted loam. These soils were mapped together because they are so intermingled that it is not practical to map them separately. About 40 to 60 percent of the complex is Thorndike loam, and about 30 to 60 percent is Plaisted loam. Except for the loam surface layer of the Thorndike soil, each soil has a profile similar to that described as representative of its series. Both soils have medium runoff. The Thorndike soil has moderate permeability and moderate available moisture capacity. In the Plaisted soil the available moisture capacity is high, permeability is moderate above the fragipan and is slow below, and roots penetrate to a depth of only 16 to 18 inches.

Included with this complex in mapping are shallow spots, rock outcrops, and small wet areas. These inclusions make up about 10 percent of the complex.

The soils in this complex can be used for row crops, hay, pasture, and apple orchards. Suitable crops are corn, potatoes, and oats if lime and fertilizer are added. (Capability subclass IIe; wildlife group 6; woodland group 4d1)

Thorndike-Plaisted loams, 8 to 15 percent slopes (TpC).—About 40 to 60 percent of this complex is Thorndike loam, and about 35 to 60 percent is Plaisted loam. Except for the loam surface layer of the Thorndike soil, each soil has a profile similar to that described as representative of its series. The Thorndike soil occurs on slightly irregular slopes, and bedrock is at a depth of about 14 inches in most places. The Plaisted soil is underlain by compact till at a depth of about 14 to 16 inches. The Thorndike soil has medium to rapid runoff, moderate permeability, and in most places, moderate available moisture capacity. The Plaisted soil has rapid runoff, high available moisture capacity, moderate permeability in the surface layer, and slow permeability in the underlying material.

Included with this complex in mapping are shallow spots, rock outcrops, and small wet areas. These inclusions make up about 5 percent of the complex.

The soils of this complex can be used for row crops, hay, pasture, or apple orchards. Corn, potatoes, oats, legumes, and grasses are suitable crops if lime and fertilizer are added in adequate amounts. (Capability subclass IIIe; wildlife group 6; woodland group 4d1)

Thorndike-Plaisted loams, 15 to 30 percent slopes (TpD).—Thorndike loam makes up more than half of this complex, and Plaisted loam amounts to less than a half. Except for the loam surface layer of the Thorndike soil, each soil has a profile similar to that described as representative of its series. Runoff is rapid from both soils. The Thorndike soil has moderate available moisture capacity and moderate permeability. The Plaisted soil has high available moisture capacity, moderate permeability in the surface layer, and slow permeability in the underlying material.

Included with this complex in mapping are shallow spots, rock outcrops, and small wet areas that make up about 5 percent of the mapping unit.

Because of the slope, the soils of this complex are better suited to hay or pasture than to cultivated crops. (Capability subclass IVe; wildlife group 8; woodland group 4d2)

Walpole Series

The Walpole series consists of poorly drained, nearly level or depressional soils. These soils are on glacial terraces, mainly in the valleys of the Kennebec, Carrabassett, and Sandy Rivers. They formed in outwash sands and gravel derived mainly from sandstone, shale, slate, and schist.

In most wooded areas the Walpole soils have a thin layer of organic material over a very dark grayish-brown fine sandy loam surface layer about 7 inches thick. The subsoil extends to a depth of about 24 inches and consists of grayish-brown, mottled fine sandy loam and sandy loam. The underlying material is grayish-brown loamy sand. Bedrock is at a depth of 6 feet or more. Except during the driest period in summer, the water table is at or near the surface.

Representative profile of Walpole fine sandy loam in a wooded area 1 mile east of high school in Madison, along western side of road one-fourth mile south of State Route 148:

O1—3 to 2 inches, fresh and partly decomposed leaves and twigs.
O2—2 inches to 0, dark-brown (10YR 3/3), granular mor.
A1—0 to 7 inches, very dark grayish-brown (10YR 3/2) fine sandy loam; strong, medium, granular structure; friable; many roots; 5 percent fine gravel; medium acid; abrupt, smooth boundary.
B21g—7 to 16 inches, grayish-brown (2.5Y 5/2) fine sandy loam; common, medium, distinct mottles of olive brown (2.5Y 4/4) and gray (10YR 5/1); moderate, medium, granular structure; friable; roots common; 5 percent gravel; strongly acid; clear, wavy boundary.
B22g—16 to 24 inches, grayish-brown (2.5Y 5/2) sandy loam; common, medium, distinct mottles of yellowish brown (10YR 5/8) and gray (10YR 5/1); weak, fine, granular structure; friable; few roots; 5 percent gravel; strongly acid; clear, wavy boundary.
IICg—24 to 60 inches, grayish-brown (2.5Y 5/2) loamy sand; few, coarse, distinct mottles of yellowish brown (10YR 5/8); single grain; loose; 10 percent gravel; strongly acid.

The A1 and B2 horizons are loam, fine sandy loam, or sandy loam. In some places there is an A2g horizon that ranges from fine sandy loam to sandy loam. The combined thickness of the A and B horizons ranges from 18 to 28 inches. The C horizon is loamy sand, sand, or gravelly sand. Reaction ranges from medium acid to strongly acid throughout the profile.

The Walpole soils are associated with the Adams, Colton, Madawaska, and Skowhegan soils. The Walpole soils are poorly drained, but the Adams and Colton soils are excessively drained, and the Madawaska and Skowhegan soils are moderately well drained. The Walpole soils contain more gravel in the solum and substratum than the Madawaska and Skowhegan soils.

Walpole fine sandy loam (Wa).—This soil is nearly level or depressional. Runoff is slow, and permeability is moderately rapid.

Included with this soil in mapping are small areas of soils that have a nearly black, mucky surface layer 6 to 8 inches thick, small areas of soils that have a gravelly loamy sand surface layer, and a few areas of soils that have a silty surface layer. Also included are small areas of soils that have a gravelly loamy sand surface layer and subsoil and, in a few places, are underlain by stratified sand and gravel at a depth of 18 to 24 inches.

Most of the acreage is woodland consisting mainly of spruce, fir, and pine and an understory of black alder and other water-tolerant shrubs. A few small areas are used for pasture and hay. Unless this soil is drained, its use for crops is limited to water-tolerant forage plants. Crops grow moderately well in drained areas if lime and fertilizer are added. Tile can be used for drainage if outlets are available. Because this soil tends to slough and flow, open ditches are difficult to maintain. (Capability subclass IIIw; wildlife group 3; woodland group 4w1)

Winooski Series

The Winooski series consists of moderately well drained soils on bottom lands along the Kennebec, Carrabassett, and Sandy Rivers and their tributaries. These soils are flooded occasionally in spring. They formed in alluvium derived mainly from schist, shale, and slate.

Winooski soils typically have a grayish-brown silt loam surface layer 8 inches thick. The subsoil, about 8 inches thick, is olive-brown silt loam. The underlying material is dark grayish-brown silt loam. Bedrock is at a depth of 6 feet or more. The water table is at a depth of 1½ or 2 feet during the wettest period.

Representative profile of Winooski silt loam in a field along a dead-end road 2 miles south of Bingham, on western side of the Kennebec River:

Ap—0 to 8 inches, dark grayish-brown (10YR 4/2) silt loam; strong, medium, granular structure; friable; many roots; medium acid; abrupt, smooth boundary.
B2—8 to 16 inches, olive-brown (2.5Y 4/4) silt loam; common, medium, distinct mottles of dark grayish brown (10YR 4/2); moderate, fine, granular structure; friable; roots common; medium acid; clear, wavy boundary.
Cg—16 to 60 inches, dark grayish-brown (2.5Y 4/2) silt loam; common, medium, distinct mottles of olive yellow (2.5Y 6/6) and light brownish gray (10YR 6/2); weak, fine, granular structure; friable; few roots; medium acid.

The combined thickness of the A and B horizons ranges from 15 to 19 inches. Texture of the Ap, B2, and Cg horizons is silt loam or very fine sandy loam. Reaction ranges from strongly acid to medium acid throughout the profile.

The Winooski soils are associated with the Hadley and Limerick soils, all of which formed in a similar kind of material. Winooski soils are moderately well drained, but the Hadley soils are well drained, and the Limerick soils are poorly drained.

Winooski silt loam (Wn).—This soil is nearly level. It generally occurs in areas that are less than 50 feet above the normal water level of the adjacent stream. Many areas are flooded occasionally early in spring. Runoff is slow. Permeability is moderate, but the seasonal high water table may change the movement of water in the substratum.

Included with this soil in mapping are areas of soils that have a fine sandy loam layer below the surface layer. Also included are a few narrow, undulating areas of soils that have very short slopes of more than 3 percent.

This soil is used for row crops, hay, and pasture. It is suited to corn, potatoes, sugar beets, oats, grasses, and legumes. (Capability subclass IIw; wildlife group 2; woodland group 3o1)

Use and Management of Soils

This section explains the system of capability classification used by the Soil Conservation Service and gives the estimated yields of the principal crops and pasture grasses grown in the county. It also contains information on the use and management of the soils in the survey area as woodland, for wildlife, in engineering, and for town and country planning.

To determine the capability classification of a given soil, refer to the "Guide to Mapping Units" at the back of this survey. The use and management of individual soils for crops and pasture are discussed in the section "Descriptions of the Soils." In the subsection on woodland, a table lists the woodland suitability groups into which the soils have been placed. The subsection on wildlife gives information about the suitability of the soils for the elements of wildlife habitat. In the subsection on engineering, the soils are not grouped but are placed in tables so that properties significant to engineering work can be given readily. In the subsection "Town and Country Planning," the soils are rated according to their limitations for selected uses.

Capability Grouping

Capability grouping shows, in a general way, the suitability of soils for most kinds of farming. The groups are made according to the limitations of the soils, the risk of damage when they are used, and the way they respond to treatment. The grouping does not take into account major and generally expensive landforming that would change slope, depth, or other characteristics of the soils; does not take into consideration possible but unlikely major reclamation projects; and does not apply to rice, cranberries, most horticultural crops, or other crops requiring special management.

Those familiar with the capability classification can infer from it much about the behavior of soils when used for other purposes, but this classification is not a substitute for interpretations designed to show suitability and limitations of groups of soils for forest trees or engineering.

In the capability system all kinds of soils are generally grouped at three levels, the capability class, subclass, and unit. The eight capability classes in the broadest grouping are designated by Roman numerals I through VIII. In class I are the soils that have few limitations, the widest range of use, and the least risk of damage when they are used. The soils in the other classes have progressively greater natural limitations. In class VIII are soils and landforms so rough, so shallow, or otherwise so limited that they do not produce worthwhile yields of crops, forage, or wood products.

The subclasses indicate major kinds of limitations within the classes. Within most of the classes there can be as many as four subclasses. The subclass is indicated by adding a small letter, *e*, *w*, *s*, or *c*, to the class numeral, for example, IIe. The letter *e* shows that the main limitation is risk of erosion unless close-growing plant cover is maintained; *w* means that water in or on the soil will interfere with plant growth or cultivation (in some soils the wetness can be partly corrected by artificial drainage); *s* shows that the soil is limited mainly because it is shallow, droughty, or stony; and *c*, used in only some parts of the country, indicates that the chief limitation is climate that is too cold or too dry. In this survey area *c*, for climatic limitation, is not considered necessary. Some of the soils in this survey area have two kinds of major limitations. The subclass is indicated by adding two small letters, for example, *ew*.

In class I there are no subclasses, because the soils of this class have few or no limitations. Class V can contain, at the most, only subclasses *w*, *s*, and *c*, because the soils in class V are subject to little or no erosion, though they have other limitations that restrict their use largely to pasture, range, woodland, wildlife, or recreation. Class V is not represented in this survey area.

The capability units are soil groups within the subclasses. The soils in one capability unit are enough alike to be suited to the same crops and pasture plants, to require similar management, and to be similar in productivity and in other responses to management. The soils in this survey area have not been grouped in capability units. Information about the management of the soils is given in the description of each mapping unit in the section "Descriptions of the Soils."

The eight classes in the capability system and the subclasses represented in this survey area are described in the list that follows. The subclass for each soil is given in the "Guide to Mapping Units" at the back of this soil survey. Also, the subclass assigned to any soil is listed at the end of the description of that soil in the section "Descriptions of the Soils."

Class I. Soils that have few limitations that affect their use.

Class II. Soils that have some limitations that reduce the choice of plants or that require moderate conservation practices.

- Subclass IIe. Gently sloping, well-drained, shallow and deep, loamy soils.
- Subclass IIw. Nearly level and gently sloping, moderately well drained, deep, loamy soils.

Class III. Soils that have severe limitations that reduce the choice of plants, require special conservation practices, or both.

- Subclass IIIe. Sloping and strongly sloping, shallow and deep, loamy soils.
- Subclass IIIes. Sloping to strongly sloping, sandy and gravelly soils that are limited by erosion and droughtiness.
- Subclass IIIw. Nearly level, poorly drained, loamy soils that have a seasonal water table less than a foot below the surface.
- Subclass IIIs. Nearly level and gently sloping, sandy soils that are droughty.

Class IV. Soils that have very severe limitations that restrict the choice of plants, require very careful management, or both.

- Subclass IVe. Moderately steep, loamy soils.
- Subclass IVes. Moderately steep to steep, sandy and gravelly soils that are subject to severe erosion and droughtiness.

Subclass IVw. Nearly level, poorly drained soils of silt loam texture that have a seasonal water table less than a foot below the surface.

Subclass IVs. Sloping and strongly sloping, sandy soils that are limited in use mainly by droughtiness.

Class V. Soils that are not likely to erode but have other limitations, impractical to remove, that limit their use largely to pasture, range, woodland, or wildlife. (None in this survey area.)

Class VI. Soils that have severe limitations that make them generally unsuited to cultivation and limit their use largely to pasture, woodland, or wildlife.

Subclass VIw. Nearly level, very poorly drained silty and sandy soils that are subject to frequent flooding and have a water table at or near the surface most of year.

Subclass VIs. Deep and shallow, well drained and moderately well drained, sloping to steep soils that are very stony and very rocky.

Class VII. Soils that have very severe limitations that make them unsuited to cultivation and that restrict their use largely to pasture, woodland, or wildlife.

Subclass VIIes. Deep, excessively drained, steep, sandy and gravelly soils that are limited mainly by the risk of erosion and droughtiness.

Subclass VIIw. Level and nearly level, poorly drained, very stony soils.

Subclass VIIs. Shallow, well-drained, steep, very rocky soils that are severely limited by rockiness.

Subclass VIIsw. Deep, poorly drained, level and gently sloping, very stony soils that are severely limited by stoniness and wetness.

Class VIII. Soils and landforms that have limitations that preclude their use for commercial plant production and restrict their use to recreation, wildlife, or water supply, or to esthetic purposes.

Subclass VIIIs. Excessively drained, level to steep sands and areas of Rock land that are subject to droughtiness and stoniness. The sands are subject to soil blowing and are unstable.

Estimated Yields

Table 2 shows, for most of the soils in this survey area, the estimated average acre yields of principal crops and pasture plants. The estimates are those obtained under two levels of management and are shown under columns A and B. They are averages for a period of years. In any one year, yields may be higher or lower than the average because the weather varies from year to year and management practices vary from farm to farm. The yields given in table 2 are based on experiments made by the Department of Plant and Soil Sciences at the University of Maine and on field observations made by people who have had experience with the crops and soils of this survey area. Some of the soils in the survey area are generally not used for crops or pasture and are not listed in table 2. These are Biddeford silt loam; the gravelly Colton soils and the very rocky Lyman soils that have slopes of more than 15 percent; Leicester very stony loam; Peat and muck; and the soils in the undifferentiated mapping units made up of Rock land and Thorndike and Lyman soils. The land types Dune land and Mixed alluvial land are also excluded from table 2.

In table 2, yields in columns A are those obtained in an average growing season under management ordinarily followed by most farmers in the area. Crop yields from the records of farmers and others were used as a basis in estimating the yields given in columns A.

The estimated yields shown in columns B are those that can be expected in a favorable growing season and under an improved or high level of management. This level of management provides (1) applying lime and fertilizer indicated by soil tests; (2) using a good cropping system; (3) managing crop residue well; (4) disposing of excess water where needed; (5) controlling runoff and erosion; (6) controlling weeds, brush, diseases, and insects; (7) preparing the seedbed properly; and (8) selecting crop varieties suited to the soil and to this survey area.

Engineering Uses of Soils [2]

This section provides information of special interest to engineers, planners, contractors, farmers, and others who use soil as structural material or as foundation material on which structures are built. The section discusses properties of the soils that affect construction and maintenance of roads and airports, pipelines, building foundations, water storage facilities, erosion control structures, drainage systems, and sewage disposal systems. Among the properties most important in engineering are permeability, shear strength, density, shrink-swell potential, available water capacity, grain-size distribution, plasticity, and reaction. Also important are depth to the water table and depth to bedrock.

Information concerning these and related soil properties are furnished in tables 3, 4, and 5. In these tables are test data, estimates, and interpretations that can be used in—

1. Planning and designing agricultural drainage systems, farm ponds, irrigation systems, diversion terraces, and other structures for controlling water and conserving soil.
2. Selecting locations for highways, airports, pipelines, and underground cables.
3. Locating probable sources of sand, gravel, or rock suitable for use as construction material.
4. Selecting industrial, commercial, residential, and recreational areas.
5. Determining the suitability of sites for disposal of liquid waste from processing plants and effluent from septic tanks.

[2] By GLENN W. GRUBB, State conservation engineer, Soil Conservation Service.

With the use of the soil map for identification, the engineering interpretations in this subsection can be useful for many purposes. It should be emphasized, however, that they may not eliminate the need for sampling and testing at the site of specific engineering works involving heavy loads or where the excavations are deeper than the depths of layers here reported. But even in these situations, the soil map is useful for planning more detailed field investigations and for suggesting the kinds of problems that may be expected.

Some terms used by soil scientists may have a special meaning in soil science and may not be familiar to the engineer. These and other terms used in this survey are defined in the Glossary or in the "Soil Survey Manual (*13*)."

Engineering classification systems

The two systems most commonly used in classifying soils for engineering purposes are the AASHO system adopted by the American Association of State Highway Officials (*1*) and the Unified system adopted by the United States Department of Defense (*16*).

The AASHO system is used to classify soils according to those properties that affect use in highway construction. In this system, a soil is placed in one of seven groups on the basis of grain-size distribution, liquid limit, and plasticity index. These groups range from A–1 through A–7. In group A–1 are gravelly soils of high bearing strength, which are the best soils for subgrade, or foundation material. At the other extreme, group A–7 consists of clay soils that have low strength when wet. The best soils for subgrade are classified as A–1, the next best A–2, and so on to A–7, the poorest soil for subgrade. If laboratory data are available, some of these groups are subdivided into A–1–a, A–1–b, A–2–4, A–2–5, A–2–6, A–2–7, A–7–5, and A–7–6. Soil material near a classification boundary is given a symbol for both classes; for example, "A–2 or A–4."

In the Unified system soils are classified according to particle-size distribution, plasticity, liquid limit, and organic matter. Eight classes consist of coarse-grained soils and are identified as GW, GP, GM, GC, SW, SP, SM, and SC. Six classes consist of fine-grained soils and are identified as ML, CL, OL, MH, CH, and OH. Pt identifies the class of highly organic soils. Soils on the borderline between two classes are designed by symbols for both classes; for example "ML–CL."

Engineering test data

In table 3 are data from engineering tests performed by the Maine State Highway Commission on several important soils in the survey area. This table shows the general location where samples were taken, the depth to which sampling was done, and the results of tests that determine particle-size distribution and other properties significant in soil engineering.

In table 3 are moisture-density, or compaction, data for the soil tested. If soil material is compacted at successively higher moisture content and the compacted effort remains constant, the dry density of the compacted material increases as the moisture content increases, until the optimum moisture content is reached. After that, the dry density decreases as the moisture content increases. The highest dry density obtained is the *maximum dry density*, and the corresponding moisture content is the *optimum moisture*. Moisture-density data are important in earthwork because, as a rule, optimum stability is obtained if the soil is compacted to about the maximum dry density at approximately optimum moisture content.

Mechanical analyses show the percentages, by weight, of soil particles that would pass sieves of specified sizes. Sand and coarser materials do not pass through the No. 200 sieve, but silt and clay do. Silt is that material larger than 0.002 millimeter in diameter that passes through the No. 200 sieve. Clay is the part passing through the No. 200 sieve and is smaller than 0.002 millimeter in diameter. The clay fraction was determined by the hydrometer method, rather than the pipette method most soil scientists use in determining the percentage of clay in soil samples.

The coarse fraction that is larger than 3 inches is an estimated percentage of these fragments in the various horizons of the soil sample. The soils that do not have a percentage figure in this column do not have a significant content of fragments more than 3 inches in size.

Liquid limit and *plasticity index* indicate the effect of water on the strength and consistence of soil material. As the moisture content of a clayey soil is increased from a dry state, the material changes from a semisolid to a plastic state. If the moisture content is further increased, the material changes from a plastic to a liquid state. The plastic limit is the moisture content at which the soil material passes from semisolid to plastic. The liquid limit is the moisture content at which the material changes from plastic to liquid. The plasticity index is the numerical difference between the liquid limit and the plastic limit. It indicates the range of moisture content within which a soil material is plastic.

Estimated engineering properties of soils

Table 4 provides estimates of soil properties important in engineering. The estimates are based on field classification, descriptions of the soils, laboratory tests of samples representative of the soils in this survey area, comparable soils in adjacent areas, and experience gained in working with the soils in the survey area.

Depth to seasonal high water table refers to the highest level at which the ground water stands for a significant period of time.

The depth from the surface describes soil layers of typical profiles given in the section "Descriptions of the Soils." Soil layers and horizon designations do not correspond for all profiles because some layers have been combined. Other estimates of soil properties in table 4 that apply to soil layers are more representative of the entire series.

The USDA textural classification is made on the basis of the proportions of sand, silt, and clay in the soil.

Permeability, as used in table 4, relates only to movement of water downward through undisturbed soil. The estimates were based on the structure and the porosity of the soil. Plowpans, surface crusts, and other properties resulting from use of the soil were not considered.

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TABLE 2.—*Estimated average acre yields of*

[Yields in columns A are to be expected under ordinary management; those in columns B, under improved management. Absence

Soil	Silage corn		Oats		Sugar beets	
	A	B	A	B	A	B
	Tons	*Tons*	*Bu.*	*Bu.*	*Tons*	*Tons*
Adams loamy sand, 0 to 8 percent slopes		8	25	45		
Adams loamy sand, 8 to 15 percent slopes				40		
Adams loamy sand, 15 to 25 percent slopes						
Bangor silt loam, 3 to 8 percent slopes	15	30	45	70		20
Bangor silt loam, 8 to 15 percent slopes, eroded	12	20	40	60		16
Bangor very stony silt loam, 3 to 8 percent slopes						
Bangor very stony silt loam, 8 to 15 percent slopes						
Bangor very stony silt loam, 15 to 25 percent slopes						
Berkshire loam, 0 to 8 percent slopes	15	28	50	70		20
Berkshire loam, 8 to 15 percent slopes	12	20	45	60		16
Berkshire very stony loam, 0 to 8 percent slopes						
Berkshire very stony loam, 8 to 20 percent slopes						
Berkshire very stony loam, 20 to 45 percent slopes						
Buxton silt loam, 0 to 8 percent slopes	12	20	40	60		10
Buxton silt loam, 8 to 15 percent slopes, eroded		12	40	60		10
Colton gravelly sandy loam, dark materials, 8 to 15 percent slopes		10		45		
Dixmont silt loam, 0 to 8 percent slopes	15	25	40	65		18
Dixmont silt loam, 8 to 15 percent slopes	12	18	40	60		10
Dixmont very stony silt loam, 0 to 8 percent slopes						
Dixmont very stony silt loam, 8 to 20 percent slopes						
Hadley silt loam	12	30	50	80		20
Limerick silt loam	10	16	35	50		
Lyman loam, 0 to 8 percent slopes	10	15	40	55		
Lyman loam, 8 to 15 percent slopes	10	14	40	55		
Lyman very rocky loam, 0 to 15 percent slopes						
Madawaska fine sandy loam, 0 to 8 percent slopes	10	20	40	60		16
Melrose fine sandy loam, 3 to 8 percent slopes	12	30	50	70		20
Monarda silt loam	8	14		40		
Monarda very stony silt loam						
Peru loam, 0 to 8 percent slopes	10	18	40	60		12
Peru very stony loam, 0 to 8 percent slopes						
Peru very stony loam, 8 to 15 percent slopes						
Plaisted gravelly loam, 3 to 8 percent slopes	10	20	45	60		15
Plaisted gravelly loam, 8 to 15 percent slopes	10	15	40	50		12
Plaisted very stony loam, 3 to 8 percent slopes						
Plaisted very stony loam, 8 to 15 percent slopes						
Plaisted very stony loam, 15 to 25 percent slopes						
Scantic silt loam						
Skowhegan loamy fine sand		10				10
Stetson fine sandy loam, 0 to 8 percent slopes	10	18	40	60		15
Suffield silt loam, 8 to 15 percent slopes, eroded	10	20	40	55		
Suffield silt loam, 15 to 25 percent slopes, eroded						
Thorndike very rocky silt loam, 3 to 15 percent slopes						
Thorndike very rocky silt loam, 15 to 30 percent slopes						
Thorndike-Plaisted loams, 0 to 8 percent slopes	10	17	45	60		14
Thorndike-Plaisted loams, 8 to 15 percent slopes	10	15	40	60		12
Thorndike-Plaisted loams, 15 to 30 percent slopes						
Thorndike-Bangor silt loams, 0 to 8 percent slopes	12	25	45	60		16
Thorndike-Bangor silt loams, 8 to 15 percent slopes	10	16	40	60		16
Thorndike-Bangor silt loams, 15 to 30 percent slopes						
Walpole fine sandy loam						
Winooski silt loam	12	25	50	70		18

[1] Cow-acre-days is a term used to express the carrying capacity of the pasture. It is the number of animal units carried per acre multiplied by the number of days the pasture is grazed during a single grazing season without injury to the sod. An acre of pasture that provides 30 days of grazing for two cows has a carrying capacity of 60 cow-acre-days.

principal crops under two levels of management

of yield indicates that crop is not commonly grown at that level of management, or that the soil is not suited to the crop specified]

Potatoes		Apples		Hay				Pasture			
				Alfalfa-grass		Clover-grass		Permanent bluegrass		Tall grass and legume	
A	B	A	B	A	B	A	B	A	B	A	B
Bu.	*Bu.*	*Bu.*	*Bu.*	*Tons*	*Tons*	*Tons*	*Tons*	*Cow-acre-days* [1]	*Cow-acre-days* [1]	*Cow-acre-days* [1]	*Cow-acre-days* [1]
	275				2.5		2.5		114		143
					2.5		2.0		85		143
									85		143
400	575	550	750	3.0	5.0	2.5	4.0	110	171	140	270
300	500	500	800	3.0	4.5	2.5	3.5	110	171	140	270
		550	750					70	120		
		500	800					60	114		
								60	114		
400	575	550	750	3.0	5.0	2.5	4.0	110	151	140	257
300	500	500	800	3.0	4.5	2.5	3.5	110	171	140	273
		550	750					70	120		
		500	800					60	114		
								60	114		
				1.5	3.0	2.0	3.5	70	170	120	225
				1.5	3.0	2.0	3.5	70	170	120	210
	350				2.5		2.0	30	114		170
300	500	350	500	2.0	4.0	1.5	3.0	150	210	150	230
250	400	350	500	2.0	4.0	1.5	2.5	114	175	150	230
			500					114	128		
			500					108	114		
400	600			3.0	6.0	2.0	4.0	110	170	150	240
						1.0	3.0	50	140		150
200	300		450	1.5	3.0	1.0	2.0	100	150		200
200	300		450	1.5	3.0	1.0	2.0	100	150		200
								60	108		
250	400			2.5	4.0	1.5	3.0	110	150	150	230
300	500			3.0	6.0	2.0	4.0	110	170	150	240
						1.0	3.0	50	140		170
								50	117		
300	400	350	500	2.0	3.5	1.5	3.0	120	160	150	230
			500					90	121		
			500					90	114		
300	450	350	750	2.5	4.0	2.0	3.0	100	130	140	210
250	425	350	800	2.0	3.5	1.5	2.5	100	130	140	190
								70	114		
								60	108		
								60	108		
							3.0	50	140		200
					3.0	1.5	3.0	110	150		200
	400			2.0	5.0	1.0	3.0	100	150	150	230
				3.0	5.0	2.0	4.0	50	250	150	
									100		
								50	100		
								50	100		
300	400	350	700	2.5	4.0	2.0	3.0	100	130	140	200
250	350		700	2.0	3.5	1.5	2.5	100	130	130	170
								70	114		
400	500	550	750	3.0	4.5	2.5	3.5	110	171	140	225
300	400	500	800	3.0	4.0	2.5	3.5	110	123	140	225
								70	123		
						1.0	2.5		100		
300	500			2.0	4.0	2.0	4.0	100	160	150	230

TABLE 3.—*Engineering*

[Tests performed by the Maine State Highway Commission in cooperation with U.S. Department of Commerce, Bureau of

Soil name and location	Parent material	Sample number S61Me–13–	Depth	Moisture-density [1]	
				Maximum dry density	Optimum moisture
			Inches	*Lb. per cu. ft.*	*Percent*
Adams loamy sand:					
Sandy River Road in Norridgewock Township. (Modal)	Outwash.	12–1	3–10	102	20
		12–2	18–40	106	16
Madison Township. (Finer textured than modal)	Outwash.	5–1	3–13	106	17
		5–2	17–30	110	14
Norridgewock Township. (Coarser textured than modal)	Outwash.	8–1	7–10	116	16
		8–2	17–40	107	16
Berkshire loam:					
Concord Township. (Modal)	Glacial till from shale and schist.	2–1	1–7	116	13
		2–2	28–38	127	22
Bingham Township. (Firm substratum)	Glacial till from shale and schist.	1–1	7–15	95	23
		1–2	28–38	121	13
Embden Township. (Coarser textured than modal)	Glacial till from shale and schist.	6–1	4–11	97	22
		6–2	29–40	124	9
Hadley silt loam:					
Sampsons Oxbow Farm in Norridgewock Township. (Modal)	Fine sediments deposited by present river.	9–1	0–13	98	20
		9–2	13–40	95	23
Concord Township. (Finer textured than modal)	Fine sediments deposited by present river.	3–1	0–12	93	25
		3–2	12–30	100	20
Power substation in Norridgewock Township. (Coarser textured than modal)	Fine sediments deposited by present river.	10–1	0–12	105	17
		10–2	12–48	105	17
Suffield silt loam:					
Madison-Norridgewock Road in Madison Township (Modal)	Marine or lacustrine	4–1	12–15	95	27
		4–2	32–60	108	19
Athens Road in Skowhegan Township. (Coarser textured than modal)	Marine or lacustrine	7–1	14–19	98	22
		7–2	32–60	109	20

[1] Based on AASHO Designation: T99–57, Method C (*1*).
[2] Mechanical analysis according to AASHO Designation: T88 (*1*).
[3] Based on total material. Laboratory test data corrected for amount discarded in field.
[4] Based on AASHO Designation M145–49 (*1*).
[5] Based on the Unified Soil Classification System (*16*). The Soil Conservation Service and the Bureau of Public Roads have agreed to consider that all soils having plasticity indexes within 2 points of A-line are to be given a borderline classification, for example SP–SM, SC–SM, and ML–CL.

test data

Public Roads (BPR), according to standard procedures of the American Association of State Highway Officials (AASHO) (1)]

Mechanical analysis [2]									Liquid limit	Plasticity index	Classification	
Percentage passing sieve [3]—					Percentage smaller that—							
¾-inch	No. 4 (4.7mm.)	No. 10 (2.0mm.)	No. 40 (0.4mm.)	No. 200 (0.074mm.)	0.05 mm.	0.02 mm.	0.005mm.	0.002mm.			AASHO [4]	Unified [5]
	100	99	94	12	7	3	1			[6] NP	A–2–4(0)	SP–SM.
		100	89	1						NP	A–3(0)	SP.
[7] 99	98	97	83	25	12	4	2	1		NP	A–2–4(0)	SM.
100	99	99	82	5	2	1				NP	A–3(0)	SP.
100	98	97	34	11	8	5	1			NP	A–1–b(0)	SP–SM.
100	99	98	20	1						NP	A–1–b(0)	SP.
[8] 95	86	79	67	42	30	12	2		34	5	A–4(1)	SM.
[9] 81	72	68	63	46	20	7	1			NP	A–4(2)	SM.
[9] 92	83	78	67	47	35	12	1		37	8	A–4(2)	SM.
[9] 85	69	58	42	26	20	11	2	1	21	6	A–2–4(0)	SC–SM.
[9] 79	60	52	35	17	12	3	1		53	10	A–2–5(0)	SM.
[8] 94	88	83	65	26	11	4	1			NP	A–2–4(0)	SM.
		100	99	77	33	9	1			NP	A–4(8)	ML.
			100	87	53	22	3	2	39	13	A–6(9)	ML–CL.
	100	99	98	67	34	12	2	1	37	17	A–6(9)	CL.
		100	99	77	40	21	3	2	26	7	A–4(8)	ML–CL.
		100	99	67	30	7			27	11	A–6(7)	CL.
		100	99	67	32	9	1	1		NP	A–4(6)	ML.
		100	98	96	91	70	30	15	40	13	A–7–6(9)	ML–CL.
			100	99	99	97	56	26	34	13	A–6(9)	CL.
	100	98	95	76	33	10	2	1	30	4	A–4(8)	ML.
		100	99	94	91	76	51	32	30	12	A–6(9)	CL.

[6] Nonplastic.
[7] 100 percent passed the 1-inch sieve.
[8] 100 percent passed the 1½-inch sieve.
[9] 100 percent passed the 3-inch sieve.

TABLE 4.—*Estimated engineering*

[Absence of data indicates estimates were not made. The symbol > means greater than; < means less than. Not rated in this

Soil series and map symbols	Depth to—		Depth from surface (typical profile)	Coarse fraction greater than 3 inches	Percentage passing sieve—				Classification
	Seasonal high water table	Bedrock			No. 4 (4.7 mm.)	No. 10 (2.0 mm.)	No. 40 (0.42 mm.)	No. 200 (0.074 mm.)	Dominant USDA texture
	Feet	*Feet*	*Inches*						
Adams: AaB, AaC, AaD	5+	6+	0–11	0	90–100	90–100	35–95	10–30	Loamy sand
			11–40	0	80–100	75–100	20–90	1–5	Loamy sand and sand
Bangor: BaB, BaC2, BgB, BgC, BgD.	5+	5+	0–8	0–10	90–100	75–95	65–80	60–70	Silt loam
			8–23	0–15	80–95	70–90	65–80	55–70	Silt loam
			23–48	5–15	80–95	80–95	70–85	55–70	Silt loam
Berkshire: BhB, BhC, BkB, BkC, BkE.	4+	5+	0–15	0–10	60–95	50–90	35–85	15–55	Loam
			15–30	0–15	60–95	50–85	35–75	25–55	Loam
			30–48	5–15	60–90	45–85	30–65	20–45	Fine sandy loam and sandy loam.
Biddeford: Bo	(1)	6+	0–5	0	100	100	100	70–95	Silt loam
			5–19	0	100	100	100	85–100	Silty clay
			19–45	0	100	100	100	95–100	Silty clay
Buxton: BuB, BuC2	1–2	6+	0–10	0	100	100	95–100	80–90	Silt loam
			10–26	0	100	100	95–100	80–95	Silt loam and silty clay loam.
			26–43	0	100	100	100	95–100	Silty clay loam
Colton: CnC, CnD, CnE	5+	6+	0–23	0–25	60–90	55–80	40–60	10–20	Gravelly sandy loam and gravelly loamy sand.
			23–40	10–40	30–55	20–50	10–35	0–10	Gravelly sand
Dixmont: DxB, DxC, DyB, DyC	1½	4+	0–21	0–10	85–95	80–90	55–85	55–70	Silt loam
			21–40	5–15	85–95	80–90	60–90	55–70	Silt loam
Dune land: Dz	1–10+	6+	0–60	0	95–100	90–100	40–90	0–5	Sand
Hadley: Ha	[2] 4+	6+	0–17	0	98–100	98–100	95–100	60–85	Silt loam
			17–40	0	96–100	96–100	95–100	55–90	Silt loam
Leicester: Lc	0–1	4+	0–8	0–10	75–100	55–95	55–80	30–55	Loam
			8–28	0–10	60–90	50–85	40–75	20–40	Gravelly sandy loam
			28–40	5–20	60–90	55–85	40–75	20–35	Gravelly sandy loam
Limerick: Lk	(1, 2)	6+	0–8		100	100	90–100	70–90	Silt loam
			8–40		100	100	80–95	55–90	Silt loam
Lyman: LyB, LyC, LzC, LzE	3+	1½	0–5	0–20	65–95	60–90	50–75	30–55	Loam
			5–18	0–20	65–90	60–85	50–75	30–50	Loam
Madawaska: MbB	1½	6+	0–9	0	95–100	90–95	70–85	30–35	Fine sandy loam
			9–28	0	95–100	90–100	75–90	25–35	Fine sandy loam
			28–60	0	45–70	35–60	10–40	5–25	Gravelly sand and silt
Melrose: MeB	5+	6+	0–23	0	100	95–100	80–100	30–45	Fine sandy loam
			23–50	0	100	100	95–100	85–95	Silty clay loam
Mixed alluvial land: Mn	(1)	6+							

See footnotes at end of table.

properties of soils

table are Rock land, Thorndike and Lyman materials (RtC and RtE) and Thorndike very rocky silt loam (TkC and TkD)]

Classification—Continued		Permeability	Available water capacity	Reaction	Optimum moisture for compaction	Maximum dry density	Shrink-swell potential	Corrosion potential for—	
Unified	AASHO							Steel	Concrete
		Inches per hour	*Inches per inch of soil*	*pH*	*Percent*	*Lb./cu. ft.*			
SM or SM–SP	A–1 or A–2	>6. 3	0. 05–0. 08	4. 5–5. 5	15–20	100–116	Low	Very low	High.
SP	A–3 or A–1	>6. 3	0. 02–0. 08	4. 5–5. 5	14–17	105–112	Low	Very low	High.
ML or ML–CL	A–4 or A–5	0. 63–2. 0	0. 18–0. 25	5. 1–6. 5		100–112	Moderate	Low	High.
ML–CL or ML	A–4	0. 63–2. 0	0. 16–0. 28	5. 1–6. 5	10–15	115–125	Moderate	Low	High.
ML–CL	A–4	0. 63–2. 0	0. 16–0. 23	5. 1–6. 5	12–20	115–130	Moderate	Low	High.
SM, ML	A–2 or A–4	0. 63–6. 3	0. 08–0. 23	5. 1–6. 0			Low	Low	High.
SM, ML	A–2 or A–4	0. 63–6. 3	0. 06–0. 19	5. 1–6. 0	18–24	95–120	Low	Low	High.
SP–SM, SM, SC–SM, or GM	A–2 or A–4	0. 63–2. 0	0. 06–0. 19	5. 1–6. 0	9–15	110–125	Low	Low	High.
OL, OH, ML, or MH	A–4 or A–7	0. 2–0. 63	0. 18–0. 25	5. 1–6. 5	20–30	90–105	Moderate	High	Moderate.
ML, MH, CL, or CH	A–6 or A–7	<0. 20	0. 13–0. 18	5. 1–7. 3	15–25	95–110	Moderate	High	Moderate.
CL or CH	A–7	<0. 20	0. 13–0. 18	6. 1–7. 3	15–25	95–110	Moderate	High	Moderate.
ML	A–4 or A–6	0. 20–2. 0	0. 18–0. 25	5. 1–6. 0	20–30	95–110	Moderate	High	Moderate.
ML–CL or ML	A–6 or A–7	0. 20–0. 63	0. 13–0. 25	5. 1–6. 0	15–25	95–110	Moderate	High	Moderate.
CL or CH	A–6 or A–7	<0. 2	0. 13–0. 18	5. 6–7. 0	15–25	95–110	Moderate	High	Moderate.
SM or SP–SM	A–1 or A–2	>6. 3	0. 04–0. 6	4. 5–5. 5	10–15	115–125	Low	Very low	High.
GP–GM or SP–SM	A–1	>6. 3	<0. 02	4. 5–6. 0	6–12	115–130	Low	Very low	High.
ML–CL or ML	A–4	0. 63–2. 0	0. 17–0. 30	5. 1–6. 0	10–16	110–120	Moderate	Moderate	Moderate.
ML–CL or ML	A–4	<0. 63	0. 13–0. 17	5. 1–6. 0	9–15	115–130	Moderate	Moderate	Moderate.
SP	A–1 or A–3	>6. 3	0. 07	4. 5–5. 5	9–12	100–115	Low	High	High.
ML	A–4	0. 63–2. 0	0. 16–0. 25	5. 1–6. 5	15–25	90–105	Moderate	Low	Low to moderate.
ML	A–4	0. 63–2. 0	0. 14–0. 20	5. 1–6. 5	15–25	95–105	Moderate	Low	Low to moderate.
SM or ML	A–2 or A–4	0. 63–2. 0	0. 13–0. 18	4. 5–5. 5			Moderate	High	High.
SM	A–2 or A–4	0. 63–6. 3	0. 08–0. 18	4. 5–5. 5	9–15	115–130	Low	High	Moderate.
SM	A–2	2. 0–6. 3	0. 08–0. 18	4. 5–5. 5	8–12	120–135	Low	High	Moderate.
ML, OL or OH	A–4 or A–7	0. 63–2. 0	0. 18–0. 25	5. 6–6. 5	12–20	95–110	Moderate	High	Low to moderate.
ML	A–4	0. 63–2. 0	0. 13–0. 25	5. 6–6. 5	12–20	95–110	Moderate	High	Low to moderate.
SM or ML	A–2 or A–4	0. 63–6. 3	0. 14–0. 18	4. 5–6. 0	10–20	100–120	Low	Low	High.
SM or SM–SC	A–2 or A–4	0. 63–6. 3	0. 14–0. 18	4. 5–6. 0	10–20	100–120	Low	Low	High.
SM	A–2	0. 63–2. 0	0. 17–0. 22	4. 5–5. 5			Low	Moderate	High.
SM	A–2	0. 63–2. 0	0. 17–0. 22	4. 5–5. 5	10–15	100–115	Low	Moderate	High.
GM or GP–GM	A–1	2. 0–6. 3	0. 08–0. 12	5. 6–6. 0	7–10	120–135	Low	Moderate	High.
SM	A–2 or A–4	0. 63–6. 3	0. 13–0. 25	5. 1–6. 0	8–18	95–110	Low	Moderate	Moderate.
CL	A–6 or A–7	<0. 20	0. 13–0. 18	5. 1–7. 3	8–18	95–110	Moderate	Moderate	Moderate.
								High	High.

TABLE 4.—*Estimated engineering*

Soil series and map symbols	Depth to—		Depth from surface (typical profile)	Coarse fraction greater than 3 inches	Percentage passing sieve—				Classification
	Seasonal high water table	Bedrock			No. 4 (4.7 mm.)	No. 10 (2.0 mm.)	No. 40 (0.42 mm.)	No. 200 (0.074 mm.)	Dominant USDA texture
	Feet	*Feet*	*Inches*						
Monarda: Mo, Mr	0–1	4+	0–7	0–10	80–100	70–90	60–80	50–65	Silt loam
			7–23	0–15	80–100	70–90	55–80	45–65	Silt loam
			23–40	0–15	75–100	65–90	50–80	45–65	Silt loam
Peat and muck: Pa	(1)	3+	0–36						
Peru: PcB, PdB, PdC	1½	4+	0–26	0–10	70–95	65–95	55–85	30–55	Loam and fine sandy loam.
			26–40	5–15	75–100	70–95	60–90	25–55	Gravelly fine sandy loam.
Plaisted: PgB, PgC, PrB, PrC, PrD.	5+	5+	0–7	0–20	70–85	70–85	60–70	30–45	Gravelly loam
			7–23	0–20	50–75	45–75	30–65	20–50	Gravelly loam and gravelly fine sandy loam.
			23–40	5–15	45–65	40–60	30–50	15–40	Gravelly sandy loam
Scantic: Sc	0–1	6+	0–17	0	100	100	90–100	85–100	Silt loam
			17–33	0	100	100	95–100	90–100	Silty clay loam
			33–43	0	100	100	95–100	90–100	Clay
Skowhegan: Sk	1½–2	6+	0–5	0	100	90–100	70–90	10–30	Loamy fine sand
			5–18	0	100	80–95	70–90	4–25	Loamy fine sand
			18–40	0	100	95–100	80–100	2–25	Loamy sand and sand
Stetson: StB	5+	6+	0–6	0–10	65–100	60–100	50–85	20–50	Fine sandy loam
			6–21	0–10	40–100	30–80	15–55	15–40	Gravelly fine sandy loam
			21–40	5–25	40–65	25–55	10–35	5–15	Sand and gravel
Suffield: SuC2, SuD2	5+	6+	0–21	0	95–100	95–100	90–100	75–95	Silt loam
			21–42	0	100	100	95–100	80–100	Silty clay loam
Thorndike: TpB, TpC, TpD, TtB, TtC, TtD. (For properties of Plaisted soil in units TpB, TpC, and TpD and for Bangor soil in units TtB, TtC, and TtD, refer to their respective series.)	3+	1½+	0–18	0–15	65–85	45–70	35–50	20–45	Silt loam
Walpole: Wa	(1)	6+	0–7	0–5	85–100	85–100	70–100	30–50	Fine sandy loam
			7–24	0–5	80–100	80–100	60–95	20–50	Fine sandy loam and sandy loam.
			24–42	0–20	45–100	40–95	25–90	0–25	Loamy sand
Winooski: Wn	1½–2	6+	0–8	0	100	100	90–100	70–90	Silt loam
			8–40	0	100	100	80–95	55–90	Silt loam

[1] High water table at the surface.

properties of soils—Continued

Classification—Continued		Permeability	Available water capacity	Reaction	Optimum moisture for compaction	Maximum dry density	Shrink-swell potential	Corrosion potential for—	
Unified	AASHO							Steel	Concrete
		Inches per hour	*Inches per inch of soil*	*pH*	*Percent*	*Lb./cu. ft.*			
ML	A–4	0. 63–6. 3	0. 15–0. 18	5. 1–5. 5		95–100	Low	High	High.
ML–CL or SM–SC	A–4	0. 63–2. 0	0. 15–0. 18	5. 1–6. 5	9–15	115–130	Low	High	Moderate.
ML–CL or SM	A–4	<0. 20	0. 10–0. 18	6. 1–7. 3	9–12	120–135	Low	High	Moderate.
Pt				3. 5–4. 5				High	High.
SM or ML	A–2 or A–4	0. 63–2. 0	0. 13–0. 18	4. 5–5. 5	10–16	110–120	Low	Moderate	Moderate.
SM or ML	A–2 or A–4	<0. 63	0. 08–0. 13	4. 5–6. 0	9–15	115–130	Low	Moderate	Moderate.
SM	A–2 or A–4	2. 0–6. 3	0. 17–0. 18	4. 5–5. 5			Low	Moderate	Moderate.
SM or SC	A–2 or A–4	0. 63–2. 0	0. 15–0. 18	4. 5–5. 5	10–19	100–115	Low	Low	Moderate.
GM, GC, or SM	A–1, A–2, or A–4	<0. 63	0. 13–0. 16	4. 5–5. 5	8–14	110–130	Low	Low	Moderate.
OL, OH, ML, CL or MH	A–4, A–5 or A–7	0. 63–2. 0	0. 18–0. 23	5. 1–6. 0	25–40	75–95	Moderate	High	Moderate.
CL, MH, or ML	A–6 or A–7	<0. 20	0. 16–0. 20	5. 6–6. 5	8–18	90–110	Moderate	High	Moderate.
CL	A–6 or A–7	<0. 20	0. 12–0. 16	5. 6–7. 3	8–18	90–110	Moderate	High	Moderate.
SM or SM–SP	A–2	2. 0–6. 3	0. 10–0. 15	4. 5–5. 5			Low	Moderate	Moderate.
SP, SM–SP or SM	A–2 or A–3	2. 0–6. 3	0. 10–0. 15	4. 5–5. 5	13–17	110–120	Low	Moderate	High.
SP	A–2 or A–3	>6. 3	0. 05–0. 10	5. 1–6. 0	11–16	100–105	Low	Moderate	High.
SM	A–2 or A–4	2. 0–6. 3	0. 14–0. 21	5. 1–6. 0			Low	Moderate	Moderate.
SM or GM	A–1, A–2, or A–4	2. 0–6. 3	0. 08–0. 13	5. 1–6. 0	10–15	110–120	Low	Low	High.
GM or SW	A–1 or A–2	>6. 3	0. 02–0. 05	5. 1–6. 5	9–12	115–135	Low	Very low	High
ML or CL	A–4 or A–6	0. 63–2. 0	0. 16–0. 20	5. 1–6. 5	20–30	90–105	Low to moderate	Moderate	Moderate.
ML, CL, or ML–CL	A–6 or A–7	<0. 20	0. 14–0. 18	5. 6–7. 3	15–25	95–110	Low to moderate	Moderate	Moderate.
SM	A–1, A–2, or A–4	0. 63–2. 0	0. 14–0. 18	5. 1–6. 0	11–15	110–130	Low	Low	High.
SM	A–2 or A–4	2. 0–6. 3	0. 08–0. 18	5. 1–6. 0			Low	High	Moderate.
SM or SC	A–2 or A–4	2. 0–6. 3	0. 08–0. 18	5. 1–6. 0	13–17	110–120	Low	High	High.
SM, SP–SM, SP, or GP	A–1, A–2, or A–3	>6. 3	0. 02–0. 08	5. 1–6. 0	10–15	100–120	Low	High	High.
ML	A–4	0. 63–2. 0	0. 18–0. 25	5. 1–6. 0	12–18	95–105	Low	Moderate	Low to moderate.
ML	A–4	0. 63–2. 0	0. 14–0. 25	5. 1–6. 0	12–18	95–105	Low	Moderate	Low to moderate.

[2] Subject to stream overflow.

TABLE 5.—*Engineering*

[Interpretations were not made for Rock

Soil series and map symbols	Susceptibility to frost action	Suitability as source of—			Soil features affecting
		Topsoil	Sand and gravel	Road fill	Highway location
Adams: AaB, AaC, AaD.	Low	Poor: sandy	Good for fine sand; unsuitable for gravel.	Fair: poorly graded; lacks binder.	Stable subgrade; cuts on slopes erodible.
Bangor: BaB, BaC2, BgB, BgC, BgD.	High: high available water capacity; good capillary movement.	Fair, except poor on stony phases: thin surface layer; high content of small stone fragments.	Not suitable	Good	Seepage in deep cuts; stones throughout soil.
Berkshire: BhB, BhC, BkB, BkC, BkE.	Moderate: moderate available water capacity; moderate capillary movement.	Fair, except poor on stony phases: thin surface layer; high content of small stone fragments.	Not suitable: high content of fines and micaceous material.	Good	Seepage in deep cuts; stones throughout soil.
Biddeford: Bo	High: high available water capacity; good capillary movement.	Poor: highly organic, silty, and clayey.	Not suitable	Not suitable: poorly graded; high content of silt and clay.	High water table; susceptible to frost heave; moderate shrink-swell potential; low shear strength.
Buxton: BuB, BuC2	High: high available water capacity; good capillary movement.	Fair: thin surface layer; high content of silt and clay.	Not suitable	Poor: poorly graded; high content of silt and clay.	Seasonal high water table; seepage and sloughing.
Colton: CnC, CnD, CnE	Low	Poor: gravelly	Good	Good	No unfavorable features.
Dixmont: DxB, DxC, DyB, DyC.	High: high available water capacity; good capillary movement.	Good, except poor on stony phases.	Not suitable	Fair: silty	Seepage and slides above compact layer; hazard of erosion along cut slopes.
Dune land: Dz	Low	Unsuitable: clean dune sand.	Fair for sand; unsuitable for gravel.	Poor: poorly graded; lacks binder.	Poor stability

interpretations of soils

land, Thorndike and Lyman materials (RtC, RtE)]

Soil features affecting—Continued						
Pipeline construction and maintenance	Farm ponds		Agricultural drainage	Irrigation	Terraces or diversions	Waterways
	Reservoir area	Embankment				
Subject to sloughing; corrosivity high for concrete, very low for steel.	Excess seepage; porous substratum.	Unstable on steep slopes in some places; very pervious; erodible.	Well drained; very rapid permeability.	Very low available water capacity.	Difficult to vegetate; very rapid permeability; erodible.	Difficult to vegetate; very rapid permeability; erodible.
Stones throughout soil; corrosivity for concrete high, low for steel.	Moderate to rapid permeability; stones throughout soil.	Stable; moderate to rapid permeability; slow permeability when compacted; stones throughout soil.	Well drained; moderate to rapid permeability; seep spots in some places.	Medium intake rate; high available water capacity.	Sloping and steep in places; stones throughout the soil.	Subject to erosion.
Stones throughout soil; corrosivity high for concrete, low for steel.	Moderate to rapid permeability; stones throughout soil.	Stable; moderate to rapid permeability; slow permeability when compacted; stones throughout soil.	Well drained; moderate to rapid permeability.	Moderate available water capacity.	Stones throughout soil; sloping and steep in places.	Stones throughout soil.
High water table; corrosivity moderate for concrete, high for steel.	High water table; slow permeability.	Shear strength low in place but fair in fill if dry and compacted.	High water table; slow permeability; outlets not available in places.	High water table; wetness.	Occupies nearly level areas.	Occupies nearly level areas and depressions; wetness.
Seasonal high water table; corrosivity moderate for concrete, high for steel.	Slow permeability; seasonal high water table.	Erodible; fair stability.	Fine materials fill tile in some places; high water table; slow permeability.	High available water capacity; seasonal high water table; seepage; slow permeability.	Erodible	May erode before cover is established; seepage.
Corrosivity very low for steel; high for concrete.	Excess seepage	Stable in fill; rapid permeability.	Well drained	High intake rate; very low available water capacity.	Irregular topography; highly pervious.	Very low available water capacity; difficult to vegetate.
Seasonal high water table; corrosivity moderate for concrete, moderate for steel.	Seasonal high water table; slow permeability.	Stable when compacted; seasonal high water table; stones throughout soil.	Steep slopes and seepage spots; seasonal high water table.	Medium intake rate; high available water capacity.	Compact layer may prolong seepage in wet spots.	Prolonged seepage from local wet area; may erode before cover is established.
Unstable; corrosivity high for concrete and steel.	Pervious; excess seepage.	Poor stability; pervious; subject to soil blowing.	Excessively drained.	Very low available water capacity.	Very rapid permeability; short variable slopes; slight runoff; subject to soil blowing.	Very droughty; difficult to vegetate; subject to soil blowing.

TABLE 5.—*Engineering*

Soil series and map symbols	Susceptibility to frost action	Suitability as source of—			Soil features affecting
		Topsoil	Sand and gravel	Road fill	Highway location
Hadley: Ha	Moderate: high available water capacity; good capillary movement.	Good	Not suitable to a depth of 40 inches; sand and gravel below a depth of 40 inches in some places.	Poor: high content of silt.	Subject to flooding
Leicester: Lc	High: high water table.	Poor: stony	Not suitable; high water table.	Fair: high water table.	High water table; stones throughout soil.
Limerick: Lk	High: high water table; high content of silt; good capillary movement.	Fair: wetness; high content of organic matter.	Not suitable; high water table; subject to flooding.	Not suitable; organic; high content of silt.	High water table; subject to flooding.
Lyman: LyB, LyC, LzC, LzE.	Moderate: low available water capacity.	Fair, except poor on rocky phases: thin surface layer.	Not suitable; shallow to bedrock.	Poor: shallow to bedrock.	Shallow to bedrock.
Madawaska: MbB	High: high available water capacity; moderate capillary movement.	Fair: surface layer low in content of silt.	Fair to not suitable: sand below a depth of 36 inches.	Fair: poorly graded sands.	Subject to seepage and erosion on cut slopes; seasonal high water table.
Melrose: MeB	Moderate: moderate to high available water capacity; moderate capillary movement.	Good	Not suitable	Poor: high content of silt and very fine sand.	Low shear strength in subsoil; subject to seepage; erosion and sloughing on cut slopes.
Mixed alluvial land: Mn	High: high available water capacity; good capillary movement.	Poor: high content of organic material; subject to flooding.	Poor: subject to flooding; very high water table.	Poor: high content of organic matter, silt, and clay.	High water table; subject to flooding.
Monarda: Mo, Mr	High: high available water capacity; good capillary movement.	Poor: stones throughout soil; thin surface layer; wetness.	Not suitable; excess fines.	Fair: wetness	High water table

interpretations of soils—Continued

Soil features affecting—Continued						
Pipeline construction and maintenance	Farm ponds		Agricultural drainage	Irrigation	Terraces or diversions	Waterways
	Reservoir area	Embankment				
Subject to flooding; corrosivity low to moderate for concrete, low for steel.	Moderate permeability; subject to flooding.	Moderate stability; susceptible to piping.	Well drained; small wet spots in some places.	Moderate intake rate; high available water capacity.	Nearly level	Subject to flooding.
High water table; stones throughout soil; corrosivity moderate for concrete, high for steel.	High water table; moderate seepage; stony.	High water table; stable; stony.	High water table; stones throughout soil.	Wetness; high water table.	High water table; stony.	High water table; stony.
High water table; subject to flooding; subject to sloughing; corrosivity moderate for concrete, high for steel.	Subject to flooding; seepage; seasonal high water table.	Subject to piping; moderate stability; high water table; poor compaction characteristics.	Inadequate natural outlets; high water table; subject to flooding.	Wetness; high water table.	Occupies nearly level areas and flood plains.	Subject to flooding; high water table.
Shallow to bedrock; corrosivity high for concrete, low for steel.	Shallow to pervious bedrock.	Shallow to bedrock.	Well drained	Moderate to low available water capacity; shallow to bedrock.	Shallow to bedrock.	Shallow to bedrock.
Seasonal high water table; corrosivity high for concrete, medium for steel.	Seasonal high water table; pervious substratum; seepage.	Stable; subject to piping; erodible.	Seasonal high water table; permeable substratum.	Moderate intake rate; high available water capacity.	Seasonal high water table; seepage.	Seasonal high water table; seepage.
Subject to sloughing; corrosivity moderate for concrete and for steel.	Moderate to moderately rapid permeability in surface layer; slow permeability in subsoil.	Erodible; moderate to moderately rapid permeability in surface layer.	Well drained, but has seep spots in some places.	Moderately high intake rate; moderate to high available water capacity.	Moderate to moderately rapid permeability in surface layer; slow permeability at a depth of 20 to 40 inches.	Moderate to moderately rapid permeability in surface layer; seepage between sandy and clayey layers.
High water table; corrosivity high for concrete and steel.	High water table; subject to flooding; pervious substratum in places.	High content of organic matter; difficult to compact.	High water table; subject to flooding; inadequate natural outlets.	High water table; subject to flooding; inadequate drainage.	Subject to flooding.	High water table.
High water table; stones throughout soil; corrosivity moderate for concrete, high for steel.	Slow permeability; high water table; stones throughout soil.	High water table; stable; stones throughout soil.	High water table; slow internal drainage; stones throughout soil.	High water table; wetness; slow permeability; stones throughout soil.	High water table; stones throughout soil.	Subject to prolonged seepage; high water table.

TABLE 5.—*Engineering*

Soil series and map symbols	Susceptibility to frost action	Suitability as source of—			Soil features affecting
		Topsoil	Sand and gravel	Road fill	Highway location
Peat and muck: Pa	High: high available water capacity.	Not suitable: wetness; high content of organic matter.	Not suitable: wetness; high content of organic matter.	Not suitable: wetness; high content of organic matter.	Very high water table; unstable; susceptible to subsidence.
Peru: PcB, PdB, PdC	Moderate: moderate available water capacity; moderate capillary movement.	Good, except poor on stony phases.	Not suitable: excess fines.	Fair: has fragipan and is difficult to dig.	Seasonal high water table; seepage and slides along compact layer; stony.
Plaisted: PgB, PgC, PrB, PrC, PrD.	Moderate: moderate available water capacity; moderate capillary movement.	Fair: some stones on surface.	Not suitable: excess fines.	Fair to good	Subject to seepage on cut slopes; stones throughout soil.
Scantic: Sc	High: high available water capacity; good capillary movement.	Poor: wetness; very high content of silt.	Not suitable	Not suitable; high content of silt and clay.	High water table; subject to frost heave; low shear strength.
Skowhegan: Sk	Moderate: moderate available water capacity; moderate capillary movement.	Fair: high content of sand, low content of silt.	Good	Good	Seasonal high water water table; subject to sloughing.
Stetson: StB	Low	Fair: thin surface layer; low content of silt.	Good	Good	No unfavorable features.
Suffield: SuC2, SuD2	High: high available water capacity; good capillary movement.	Fair: thin surface layer; very high content of silt.	Not suitable	Poor: excess fines.	Cut slopes erodible; subject to sloughing; high shrink-swell potential; susceptible to frost heave; low shear strength.
Thorndike: TkC, TkD, TpB, TpC, TpD, TtB, TtC, TtD. (For interpretations of Plaisted soil in units TpB, TpC, and TpD, and for Bangor soil in units TtB, TtC, and TtD, refer to their respective series.)	Moderate: low available water capacity.	Poor: shallow to bedrock.	Not suitable: shallow to bedrock.	Poor	Shallow to bedrock

interpretations of soils—Continued

Soil features affecting—Continued						
Pipeline construction and maintenance	Farm ponds		Agricultural drainage	Irrigation	Terraces or diversions	Waterways
	Reservoir area	Embankment				
Very high water table; corrosivity high for concrete and steel.	Stability will vary at depth below water table; pervious.	Very high water table; unstable.	Very high water table; subject to sloughing; susceptible to subsidence.	Very high water table; wetness; drainage difficult.	Very high water table; unstable; subject to sloughing; high content of organic matter.	Very high water table; unstable; high content of organic matter.
Susceptible to subsidence; seasonal high water table; very firm substratum; corrosivity moderate for concrete and steel.	Seasonal high water table; slow permeability.	Stable; seasonal high water table; stones throughout soil.	Seasonal high water table; seepage above compact layer; stones throughout soil.	Seasonal high water table; slow permeability.	Stones throughout soil; seepage above compact layer.	Stones throughout soil; seepage above compact layer.
Stones throughout soil; very firm substratum; corrosivity moderate for concrete, low for steel.	Slow permeability in compact layer.	Good stability on compaction; stones throughout soil.	Well drained; wet in spots in some places.	Moderately high available water capacity; moderate intake rate.	Subject to seepage above compact layer; stones throughout soil.	Subject to seepage above compact layer; stones throughout soil.
High water table; corrosivity moderate for concrete, high for steel.	High water table; slow permeability.	Low shear strength.	High water table; slow permeability; inadequate outlets; seepage from uplands.	High available water capacity; very slow intake rate; usually wet.	High water table; inadequate outlets; erodible; seepage; low shear strength.	Erodible; seepage.
Seasonal high water table; subject to sloughing; corrosivity high for concrete, moderate for steel.	Excess seepage	Pervious	Seasonal high water table; subject to sloughing.	Seasonal high water table; moderate available water capacity.	Erodible	Erodible.
Corrosivity high for concrete, very low for steel.	Excess seepage	Stable; rapid permeability.	Well drained	Moderately high intake rate; moderate available water capacity.	Loose substratum, erodible.	Erodible; loose substratum.
Subject to sloughing; corrosivity moderate for concrete and steel.	Slow permeability.	Erodible; fair stability.	Well drained	Slow intake rate; high available water capacity.	Undulating and rolling slopes; erodible.	Erodible.
Shallow to bedrock; corrosivity high for concrete, low for steel.	Excess seepage; shallow to bedrock.	Shallow to bedrock.	Well drained; shallow to bedrock.	Moderate available water capacity; moderate intake rate; erodible.	Shallow to bedrock.	Shallow to bedrock; erodible.

TABLE 5.—*Engineering*

Soil series and map symbols	Susceptibility to frost action	Suitability as source of—			Soil features affecting
		Topsoil	Sand and gravel	Road fill	Highway location
Walpole: Wa	High	Poor	Poor	Poor	High water table; susceptible to frost heave.
Winooski: Wn	Moderate: moderate available water capacity; good capillary movement.	Good	Not suitable: high content of silt.	Poor: high content of silt; poorly graded; subject to flooding.	Subject to flooding; seasonal high water table.

Available water capacity (also termed available moisture capacity) is the capacity of soils to hold water available for use by most plants. It is commonly defined as the difference between the amount of soil water at field capacity and the amount at wilting point. It is commonly expressed as inches of water per inch of soil.

Reaction, the degree of acidity or alkalinity of a soil, is expressed as a pH value. The pH value and corresponding terms used to describe soil reaction are defined in the Glossary.

Shrink-swell potential refers to the change in volume of a soil that results from change in moisture content. The shrinking and swelling of soils cause much damage to building foundations, roads, and other structures.

Corrosivity indicates the potential damage to uncoated metal or concrete structures through chemical action that dissolves or weakens the structural material. Structural materials may corrode when buried in soil. Installations that intersect soil boundaries or soil horizons are more likely to be damaged by corrosion than are installations entirely in one kind of soil or soil horizon.

Engineering interpretations of soils

Table 5 contains information useful to engineers and others who plan to use soil material in construction of highways, farm facilities, buildings, and sewage disposal systems. Most features listed are detrimental, but important desirable features also may be listed. The interpretations in table 5 are based on the estimated engineering properties of the soils in table 4, available test data, including those in table 3, and field experience.

The rating for susceptibility to frost action indicates the effect of freezing and thawing on a soil. The properties of a soil that most affect frost action are those that influence moisture content, such as texture, available water capacity, permeability, and drainage.

Topsoil is fertile soil material, ordinarily rich in organic matter, that is used as a topdressing for lawns, gardens, roadbanks, and the like. The ratings indicate suitability for such use. The ratings for suitability as a source of sand and gravel are based on the probability that the soils listed contain deposits of sand and gravel. The ratings do not indicate quality or size of the deposits. Road fill is material used to build embankments. The ratings of suitability indicate performance of soil material as road fill that is moved from borrow areas.

In determining the suitability of soils for the location of highways, the kind of material and drainage must be considered carefully. Where highway cuts are planned at locations that have a perched water table, a survey should be made to determine the need for interceptor drains or underdrains. Seepage on the back slope of cuts may cause slumping or sliding of the underlying material if the slope is too steep. The vertical alinement of highways is affected by boulders, highly plastic clay, and depth to bedrock. Other important features likely to influence the location and design of highways are erodibility of cuts and a high water table.

Among the soil properties that influence the construction and maintenance of pipelines are depth to bedrock, stability of the substratum, shear strength, stoniness or rockiness, steepness of slope, wetness, and corrosivity.

The construction of farm ponds is especially affected by the permeability of the soil material and the ease or difficulty in compacting it so that water cannot pass. Many of the soils in the survey area have a porous substratum that does not hold water.

Important to agricultural drainage are the drainage class, permeability, a high water table, seepage spots, natural outlets, and susceptibility to flooding.

Irrigation is affected by available water capacity, depth of the rooting zone, rate of water intake, drainage, depth to water table, susceptibility to flooding, stoniness, susceptibility to water erosion, topography, and layers in the soil that restrict the movement of water.

Terraces, diversions, and waterways are mainly affected by slope, stoniness, the water table, permeability, erodibility, droughtiness, seepage, and susceptibility to flooding.

interpretations of soils—Continued

Soil features affecting—Continued						
Pipeline construction and maintenance	Farm ponds		Agricultural drainage	Irrigation	Terraces or diversions	Waterways
	Reservoir area	Embankment				
High water table; corrosivity high for concrete and steel.	Excess seepage; high water table.	Highly pervious	High water table; seepage; highly pervious.	High water table; moderate available water capacity.	High water table; highly pervious; seepage.	High water table; seepage.
Subject to flooding; seasonal high water table; corrosivity low to moderate for concrete, moderate for steel.	Seasonal high water table; subject to flooding; pervious substratum.	Low shear strength and stability; susceptible to piping.	Seasonal high water table; subject to occasional flooding.	Moderate intake rate; moderate to high available water capacity; seasonal high water table.	Unstable; subject to piping; seasonal high water table; pervious substratum.	Subject to flooding; erodible.

Woodland [3]

About 585,000 acres, or about 87 percent of this survey area, is woodland. This woodland and its products provide employment for several thousand people and contribute to the economy of the survey area.

The extensive stands of white pine that once grew in the abandoned fields and pastures have been cut, and less desirable trees have reseeded naturally. The hardwoods of high quality have been cut from the original forests, and trees of poorer quality were left. Some of the open areas, however, have been replanted to suitable trees.

Several industries in this survey area use wood. They are 2 pulpmills, 21 mills that produce long lumber, 11 mills that produce cooperage bolts, 8 mills that produce fenceposts, 2 flatware mills, and 1 mill that processes logs for veneer.

Forest types

The three major forest types in this survey area (*10*, *18*) are discussed in the following paragraphs.

Spruce-fir-northern hardwoods.—This forest type occupies about 75,000 acres of mountainous areas in the northwestern part of the survey area. Birch, beech, and maple grow in the higher areas that include mountain slopes where the soils are shallow and dry. Spruce and fir grow on the wetter soils in depressions and on the lower slopes. Red pine, aspen, and elm also grow in some places.

Northern hardwoods-hemlock-white pine.—This forest type occupies about 120,000 acres in the north-central and northeastern parts of the survey area. It is around Bingham and extends from that city eastward. Although birch, beech, and maple are the principal trees, spruce and fir grow in the wetter areas of lower slopes and in the bogs, and the stand may include red pine, aspen, and elm.

Transitional hardwoods—white pine-hemlock.—About 390,000 acres is in this forest type. Spruce and fir also grow in the wetter areas on lower slopes and in bogs. Other trees include red pine, aspen, and elm.

Woodland suitability groups

Some of the soils in this survey area have been grouped according to those characteristics that affect the growth of trees and management of the stand. Each group is made up of soils that are similar in potential productivity for trees, that have about the same suitability for trees, and that require about the same management.

Listed in table 6 are the 13 woodland suitability groups into which most of the soils of the survey area have been placed. In table 6 the soils in each group are designated by soil series and by their map symbols. The names of the soil series represented are given for each woodland suitability group, but this does not mean that all of the soils in a given series appear in the group. Because trees suitable for commercial use do not grow on them, Biddeford silt loam (Bo), Dune land (Dz), Mixed alluvial land (Mn), and Peat and muck (Pa) have not been placed in woodland groups. The woodland group assigned to any soil is listed in the "Guide to Mapping Units" at the back of this survey and at the end of the description of that soil in the section "Description of the Soils."

The symbol for a woodland suitability group indicates suitability class, subclass, and group. For example, a woodland group has the symbol 3o1. The first number in this symbol indicates the woodland suitability class. There are six classes. Soils in class 1 have the highest potential productivity, and those in class 6, the lowest. Maine, however, is too far north to have soils that qualify for classes 1 or 2. In consequence, a soil in class 3 is considered to have *excellent* site quality in Maine, and those in classes 4, 5, and 6, to have *good*, *fair*, and *poor* quality, respectively. The soils are placed in suitability classes on basis of site indexes. For those soils on which site indexes were not available, the class was estimated on basis of data obtained for benchmark soils throughout the New England States.

[3] By JOHN A. DIRKMAN, forester, Maine Forest Service.

The second part of the symbol identifying a woodland group is a small letter, which indicates the woodland suitability subclass. Except for the letter *o*, this letter indicates an important soil property that imposes a moderate or severe hazard or limitation that affects managing the soils of the group for trees. The letter *o* shows that the soils have few limitations that restrict their use for trees. The letter *c* indicates that the main limitation is the kind or amount of clay in the upper part of the soils in the group; *d* means that rooting depth is restricted because the soils are shallow to a hardpan, to hard rock, or to some other restrictive material; *r* shows that the main limitation is steep slopes; *s* indicates that the soils are sandy, dry and unstable, have little or no difference in texture between the surface layer and subsoil, have low available moisture capacity, and generally have a

TABLE 6.—*Woodland suitability groups, site indexes for specified trees,*

Woodland suitability group, series, and map symbols	Site index and site quality for [1]—			Trees preferred—
	White pine [2]	Spruce and fir [3]	Northern hardwoods [4]	In existing stands
Group 3o1: Deep, well drained and moderately well drained soils that have high available water capacity and are very stony in some places. (Bangor: BaB, BaC2, BgB, BgC; Berkshire: BhB, BhC, BkB, BkC; Dixmont: DxB, DxC, DyB, DyC; Hadley: Ha; Madawaska: MbB; Peru: PcB, PdB, PdC; Skowhegan: Sk; Thorndike: TtB, TtC; and Winooski: Wn.)	70–80 (Excellent)	60–70 (Excellent)	59–66 (Excellent)	White pine, red pine, northern hardwoods, white spruce, balsam, fir.
Group 3r1: Well-drained, moderately steep and steep, medium-textured soils that are stony in most places. The Berkshire soil is deep, and the closely intermingled Berkshire and Thorndike soils are deep to shallow. (Bangor: BgD; Berkshire: BkE; and Thorndike: TtD.)	70–80 (Excellent)	60–70 (Excellent)	59–66 (Excellent)	White pine, red pine, northern hardwoods, white spruce, balsam, fir.
Group 4o1: Well drained and moderately well drained, nearly level to sloping, medium-textured soils that have high available moisture capacity. (Buxton: BuB; and Melrose: MeB.)	60–70 (Good)	50–60 (Good)	52–59 (Good)	White pine, white spruce
Group 4x1: Shallow, nearly level to steep soils that are very rocky and have rock outcrops in places; moderate to low available water capacity. (Lyman: LzC, LzE; and Thorndike: TkC, TkD.)	60–70 (Good)	50–60 (Good)	52–59 (Good)	White spruce, northern hardwoods, red spruce.
Group 4w1: Soils that have a high water table and are excessively wet for a considerable part of the year. (Leicester: Lc; Limerick: Lk; Monarda: Mo, Mr; and Walpole: Wa.)	60–70 (Good)	50–60 (Good)	52–59 (Good)	Red spruce, spruce fir
Group 4d1: Shallow, well-drained, nearly level to moderately steep, medium-textured soils that have a fragipan and are gravelly or very stony in most places. (Lyman: LyB, LyC; Plaisted: PgB, PgC, PrB, PrC; and Thorndike: TpB, TpC.)	60–70 (Good)	50–60 (Good)	52–59 (Good)	Northern hardwoods, white pine, white spruce, red spruce.
Group 4d2: Well-drained, moderately steep to steep soils that are shallow to a fragipan or to hard rock. (Plaisted: PrD; and Thorndike: TpD.)	60–70 (Good)	50–60 (Good)	52–50 (Good)	White pine, white spruce, red spruce, northern hardwoods.
Group 4s1: Deep, excessively drained, sandy soils that have low available moisture capacity and are droughty; Colton soil is gravelly. (Adams: AaB, AaC; Colton: CnC; and Stetson: StB.)	60–70 (Good)	50–60 (Good)	52–59 (Good)	White pine, red pine, white spruce
Group 4s2: Deep, excessively drained, moderately steep to steep, sandy soils that have low available moisture capacity and are droughty; Colton soils are gravelly. (Adams: AaD; and Colton: CnD, CnE.)	60–70 (Good)	50–60 (Good)	52–59 (Good)	White pine, red pine, white spruce
Group 5w1: Poorly drained silt loam soil that is excessively wet for more than 4 months each year. (Scantic: Sc.)	50–60 (Fair)	40–50 (Fair)	45–52 (Fair)	White pine, white spruce, balsam, fir

See footnotes at end of table.

low supply of plant nutrients; *w* means that water in or on the soil, either seasonally or year round, is the chief limitation; and *x* shows that stones or rocks in and on the soils are the chief limiting factor.

The last part of the symbol, another number, differentiates one woodland suitability group from others that have identical first and second parts in their identifying symbol. For example, the last number in the symbol *4d1* differentiates the woodland suitability group bearing the last number from other groups having *4d* as the first two parts of their identifying symbol.

Given for each woodland group listed in table 6 are site index and site quality for white pine, spruce and fir, and northern hardwoods. Also shown are the trees generally preferred in the management of existing stands and for planting. Some hazards and limitations that affect

trees preferred, and hazards and limitations that affect management

Trees preferred—Continued	Erosion hazard	Equipment limitations	Seedling mortality	Plant competition for—		Windthrow hazard
For planting				Hardwoods	Conifers	
White pine, red pine, white spruce, Norway spruce, larch.	Slight	Slight	Slight	Slight	Moderate	Slight.
White pine, red pine, white spruce, Norway spruce, larch.	Slight	Moderate	Slight	Slight	Moderate	Slight.
White pine, white spruce, northern hardwoods.	Slight	Slight	Slight [5]	Slight	Moderate	Slight.
White pine, white spruce	Slight	Moderate	Severe	Slight	Moderate	Severe.
White-cedar, white pine	Slight	Severe	Severe	Moderate	Moderate	Severe.
White pine, white spruce, Norway spruce.	Slight	Slight	Severe	Slight	Moderate	Severe.
White pine, white spruce, Norway spruce.	Moderate	Moderate	Severe	Slight	Moderate	Severe.
Red pine, white pine	Slight	Slight	Moderate	Slight	Moderate	Slight.
Red pine, white pine	Slight	Moderate	Moderate	Slight	Moderate	Slight.
White pine, white spruce, white-cedar	Slight	Severe	Severe	Severe	Severe	Severe.

TABLE 6.—*Woodland suitability groups, site indexes for specified trees,*

Woodland suitability group, series, and map symbols	Site index and site quality for [1]—			Trees preferred—
	White pine [2]	Spruce and fir [3]	Northern hardwoods [4]	In existing stands
Group 5c1: Moderately well drained and well drained soils that are underlain by clayey sediments at a depth of about 18 inches; fairly low natural fertility; Buxton soil is eroded. (Buxton: BuC2; Suffield: SuC2.)	50–60 (Fair)	40–50 (Fair)	45–52 (Fair)	White pine, white spruce, northern hardwoods.
Group 5c2: Well-drained, moderately steep, eroded soil that has a silt loam surface layer and is shallow to the underlying clayey material. (Suffield: SuD2.)	50–60 (Fair)	40–50 (Fair)	45–52 (Fair)	White pine, sugar maple, white birch, yellow birch.
Group 6x1: Rock land and shallow, well-drained or excessively drained, medium-textured soils that are underlain by bedrock at a depth of about 10 to 12 inches. (Rock land: RtC, RtE.)	40–50 (Poor)	<40 (Poor)	38–45 (Poor)	Red spruce

[1] Ratings in parentheses following site index are for site quality.
[2] Based on data from USDA Bulletin No. 13 (*5*).
[3] Based on an unpublished curve by the Vermont Forest Service and the Soil Conservation Service.

management are rated in this table. The terms used in this table are explained in the following paragraphs.

A site index for a given soil is the height, in feet, that a tree growing on that soil will reach in 50 years. The site indexes for the woodland suitability groups were estimated and are given as a range in table 6, for example, 70–80. For white pine, the site indexes were based on data collected in Maine and New Hampshire by the Maine Forest Service, the New Hampshire Extension Service, and the Soil Conservation Service; those for white spruce and fir were calculated by using data obtained in Maine, New Hampshire, and Vermont by the Maine Forest Service, the Vermont Forest Service, and the New Hampshire Extension Service; and for northern hardwoods, the site indexes were based on studies made in Vermont by the Vermont Forest Service and the Soil Conservation Service.

Also listed in table 6 for each woodland suitability group are the trees that are preferred in managing the existing stands and trees preferred for planting. These trees are suitable for wood crops. They are not listed in the order of preference in table 6, and other species that are not listed may be suited to the soils in the woodland suitability groups. The trees listed as preferred for planting on the soils in a woodland suitability group are suited to those soils and have been successfully planted on them.

On the soils of each woodland suitability group are varying degrees of hazards and limitations that affect management. These limitations and hazards are rated slight, moderate, or severe as explained in the following paragraphs.

Erosion hazard refers to the soil erosion that may occur during or following cutting operations, if the soil is exposed along roads, skid trails, fire lanes, log decking areas, or other logging operations. The hazard is *slight* if little or no loss of soil is expected. It is *moderate* where a moderate loss of soil is expected and some practices are needed to reduce the risk of erosion. The erosion hazard is *severe* if logging operations are restricted and intensive and expensive practices are needed to reduce soil losses.

Equipment limitations are rated on the basis of soil characteristics and topographic features that restrict or prohibit the use of equipment needed in harvesting trees. The limitation is *slight* if there is little or no restriction to the kind of equipment that can be used. It is *moderate* if the use of harvesting equipment is moderately restricted by soil properties and topographic features. The rating is *severe* if the slope, rocks, wetness, or unstable soil material cause logging operations to be hazardous or expensive.

Seedling mortality refers to the expected losses of naturally occurring or planted seedlings. It is affected by the kind of soil, the degree of erosion, and other factors that affect seedling survival. Mortality is *slight* if less than 25 percent of the seedlings are expected to die and is *moderate* if this percentage is 25 to 50. It is *severe* if the loss of seedlings is more than 50 percent.

Plant competition refers to the degree that undesirable plants are likely to invade or compete with desirable trees when openings are made in the tree canopy. A rating of *slight* indicates that competition from other plants does not prevent adequate natural regeneration of desirable trees. Competition is *moderate* if competing plants delay but do not prevent the establishment of a desirable stand by natural regeneration or from planted seedlings. It is *severe* where natural or artificial regeneration is not adequate unless there is intensive site preparation and maintenance, including weeding.

Windthrow hazard is determined by soil characteristics that affect the normal development of tree roots and the firmness that roots anchor the trees so that they resist the force of the wind. The hazard of windthrow is *slight* if trees are not expected to be blown down in commonly

trees preferred, and hazards and limitations that affect management—Continued

Trees preferred—Continued	Erosion hazard	Equipment limitations	Seedling mortality	Plant competition for—		Windthrow hazard
For planting				Hardwoods	Conifers	
White pine, white spruce, Norway spruce.	Moderate	Moderate	Moderate	Slight	Slight	Moderate.
White pine, white spruce	Severe	Severe	Moderate	Slight	Slight	Moderate.
	Slight	Severe	Severe	Slight	Slight	Severe.

[4] Based on paper by the Vermont Forest Service and the Soil Conservation Service in 1957.
[5] Subject to damage by frost heaving.

occurring winds. It is *moderate* if root development is adequate to hold trees firmly except when the soil is excessively wet and the wind is strong. Windthrow is a *severe* hazard if tree roots do not penetrate deep enough to give stability; individual trees are blown over if they are released on all sides.

Use of Soils for Wildlife

The soils in this survey area have been placed in 14 wildlife suitability groups. The soils in each group are similar in their suitability and have about the same limitations for elements of wildlife habitat and for kinds of wildlife. They also require about the same management. The soils in each wildlife group are listed by map symbol in table 7. The wildlife group assigned to any soil is listed in the "Guide to Mapping Units" at the back of this survey, and also at the end of the description of that soil in the section "Descriptions of the Soils."

The survival and increase of most wildlife species depend mainly on the distribution of water and of plants that provide food and cover. If water or these plants are lacking or inadequate, desired wildlife will be absent or scarce.

The kinds of soils in an area affect the vegetation that grows, and the vegetation has much to do in determining the kinds and numbers of wildlife that live in the area. The soils and the plants growing on them affect the quality and quantity of water needed by wildlife. Most wildlife habitat is created or improved by planting suitable vegetation, manipulating existing vegetation so as to increase or improve desirable plants, or by a combination of these measures. For this management, a knowledge of the soils is needed.

The interpretations given in this subsection are only guides for planning the use of the mapping units shown on the soil map at the back of this soil survey. Investigations are needed at the site before developing specific areas for wildlife. Important soil features for designing, constructing, and maintaining ponds and other elements of wildlife habitat are given in the subsection "Engineering Uses of Soils."

Elements of habitat and kinds of wildlife

In table 7 most of the soils in this survey area are rated for their suitability for creating, improving, or maintaining eight elements of wildlife habitat and for their suitability for three broad classes of wildlife.

The information given in table 7 is useful in (1) broad planning for wildlife habitat in parks, in public and private refuges, in areas used for nature study, and in areas developed for recreation; (2) selecting soils that are most suitable as sites for creating, improving, or maintaining a specific kind of wildlife habitat; (3) determining the intensity of management needed for a specific habitat element; (4) eliminating sites that are difficult or are not feasible to manage as wildlife habitat; and (5) determining areas that are suitable for preserving or for acquiring and developing a wildlife habitat.

The numerical ratings used in table 7, based on limitations of the soils, are 1 for well suited, 2 for suited, 3 for poorly suited, and 4 for unsuited.

A rating of *well suited* means that the soil has few or no limitations to use as the element of wildlife habitat. Generally, the rating indicates that little management is required for the creation, improvement, or maintenance of the habitat element. A rating of *suited* indicates that the habitat element can be created, improved, or maintained, but that moderately intensive measures are needed to overcome the limitations. *Poorly suited* means that the habitat element can be created, improved, or maintained if difficult and expensive measures are used. A rating of *unsuited* indicates that it is impractical, if not impossible, to manage the soils for the habitat element. Not consid-

TABLE 7.—*Suitability of soils for elements of wildlife habitat and for kinds of wildlife*

[A rating of 1 means well suited; 2 means suited; 3 means poorly suited; and 4 means unsuited]

Wildlife group, series, and map symbols	Elements of wildlife habitat								Kinds of wildlife		
	Grain and seed crops	Grasses and legumes	Wild herbaceous upland plants	Hardwood woody plants	Coniferous woody plants	Wetland food and cover plants	Shallow impoundments	Excavated ponds	Openland	Woodland	Wetland
Group 1 Bangor: BaB, BaC2; Berkshire: BhB, BhC; Buxton: BuC2; Dixmont: DxC; Hadley: Ha; Melrose: MeB; Plaisted: PgB, PgC; and Stetson: StB.	2	1	1	1	3	4	4	4	1	1	4
Group 2 Buxton: BuB; Dixmont: DxB; Madawaska: MbB; Peru: PcB; Skowhegan: Sk; and Winooski: Wn.	2	1	1	1	3	3	3	3	2	1	3
Group 3 Monarda: Mo; Scantic: Sc; and Walpole: Wa.	3	2	2	1	2	1	1	1	2	1	1
Group 4 Biddeford: Bo.	4	3	3	1	1	1	1	1	3	1	1
Group 5 Adams: AaB, AaC; and Colton: CnC.	3	3	3	3	1	4	4	4	3	3	4
Group 6 Lyman: LyB, LyC; and Thorndike: TtB, TtC, TpB, TpC.	2	2	2	2	2	4	4	4	2	2	4
Group 7 Bangor: BgB, BgC; Berkshire: BkB, BkC; Plaisted: PrB, PrC.	4	3	1	1	3	4	4	4	3	2	4
Group 8 Adams: AaD, Bangor: BgD; Berkshire: BkE; Colton: CnD, CnE; Lyman: LzC; LzE; Plaisted: PrD; and Thorndike: TtD, TpD, TkC, TkD.	4	3	3	3	1	4	4	4	4	3	4
Group 9 Limerick: Lk; and Mixed alluvial land: Mn.	3	2	2	1	2	2	2	4	2	1	2
Group 10 Suffield: SuC2, SuD2.	3	2	1	1	3	4	4	4	2	2	4
Group 11 Leicester: Lc; and Monarda: Mr.	4	3	2	1	2	1	1	1	4	1	1
Group 12 Dixmont: DyB, DyC; Peru: PdB, PdC.	4	3	1	1	3	4	4	4	3	1	4
Group 13 Dune land: Dz; Rock land: RtC, RtE.	4	3	3	4	4	4	4	4	4	4	4
Group 14 Peat and muck: Pa.	4	4	4	4	4	3	4	4	4	4	4

ered in the ratings given in table 7 are the present land use, the present vegetation, the location of a soil in relation to other soils, and the mobility of wildlife.

The eight elements of wildlife habitat listed in table 7 are defined in the following paragraphs.

Grain and seed crops consist of domestic grains or seed-producing annuals that are planted to produce food for wildlife. Examples are corn, rye, wheat, oats, millet, buckwheat, and sunflowers.

Grasses and legumes are domestic perennial grasses and herbaceous legumes that are planted to furnish food and cover for wildlife. Examples are fescue, bromegrass, bluegrass, timothy, redtop, orchardgrass, reed canarygrass, clover, trefoil, alfalfa, and switchgrass.

Wild herbaceous upland plants are native or introduced perennial grasses and forbs that generally are established naturally and that provide food and cover mainly for upland wildlife. Examples are bluestem, indiangrass, wheatgrass, quackgrass, wild ryegrass, oatgrass, bunchberry, pokeweed, strawberry, lespedeza, beggarweed, wild bean, nightshade, goldenrod, and dandelion.

Hardwood woody plants are nonconiferous trees, shrubs, and woody vines that produce fruits, nuts, buds, catkins, twigs (browse), or foliage. These plants are used extensively as food by wildlife and are commonly established naturally but also may be planted. Examples are oak, beech, cherry, hawthorn, dogwood, viburnum, maple, birch, and poplar. Smaller plants include grape, honeysuckle, blueberry, brier, autumn-olive, and multiflora rose.

Coniferous woody plants are cone-bearing trees and shrubs that are important to wildlife mainly as cover but that also may furnish food in the form of browse, seed, or fruitlike cones. These trees and shrubs are commonly established naturally, but they also may be planted. Examples are spruce, pine, white-cedar, hemlock, balsam fir, juniper, and yew.

Wetland food and cover plants are annual and perennial, wild herbaceous plants on moist to wet sites. These plants furnish food and cover used mainly by wetland wildlife. Examples are smartweed, wild millet, bulrush, spike-sedge, rushes, sedges, burreed, wildrice, rice cutgrass, mannagrass, and cattails. Submerged or floating aquatics are not included.

Shallow impoundments are areas that have been made by impounding water, by excavating, or by using devices to control water. In table 7 the soils are rated on the basis of impoundments that generally are not more than 6 feet deep. Examples are low dikes and levees, shallow dugouts, level ditches, and devices that control the water level in marshy drainageways or channels.

Excavated ponds are dug out areas or combinations of dug out areas and low dikes that hold enough water of suitable quality and depth to support fish or wildlife. Such ponds should be built in nearly level areas, and they should have a surface area of at least one-fourth acre and, in at least one-fourth of their area, an average depth of 6 feet. Also required is a water table that is permanently high or another source of unpolluted water.

In table 7 the soils are also rated according to their suitability for three kinds of wildlife in the survey area.

Openland wildlife consists of birds and mammals that normally frequent cropland, pasture, meadow, lawns, and areas that are overgrown with grasses, forbs, and shrubs. Examples are pheasant, mourning dove, meadow lark, field sparrow, redwinged blackbird, red fox, and woodchuck. Other important openland wildlife are deer and grouse.

Woodland wildlife consists of birds and mammals that normally frequent wooded areas. They obtain food and cover in areas of hardwood trees and shrubs, coniferous trees and shrubs, or a mixture of these plants. Examples are ruffed grouse, woodcock, thrush, vireo, scarlet tanager, white-tailed deer, moose, bear, bobcat, fisher, raccoon, snowshoe hare, gray squirrel, and red squirrel.

Wetland wildlife consists of birds and mammals commonly found in ponds, marshes, swamps, and other wet areas. Examples are black duck, woodcock, heron, shore bird, beaver, mink, otter, muskrat, turtle, and frog.

Town and Country Planning

This survey area is slowly increasing in population and is decreasing in farmland and woodland as residential, commercial, and recreational facilities are developed. Skowhegan, Pittsfield, Madison, and Bingham are rapidly expanding. An effect of this expansion is the increasing need for useful and reliable information about the use of the soils for nonfarm purposes. Recreational facilities are increasing rapidly along the Kennebec River and the many lakes in the survey area.

This section of the soil survey provides information on the properties of soils and their effect on selected nonfarm uses of land. It will help community planners, developers, and individual land owners to determine the most suitable use for a particular area. Other useful information can be found on the soil maps and in other parts of the survey, particularly the section "Descriptions of the Soils" and the subsection "Engineering Uses of Soils."

Table 8 gives the estimated degree and kinds of limitations of soils for some selected uses. These limitations are rated slight, moderate, or severe. If the rating is moderate or severe, the main limiting property or properties are given. The ratings are based on the degree of the greatest single limitation. For example, if flooding severely limits the use of a soil in the disposal of sewage effluent from septic tanks, the limitation is rated severe, though the soil is well suited to that use in all other respects. A rating of *slight* indicates that the soil has no important limitation to the specific use. *Moderate* shows that the soil has some limitations to the specified use. These limitations need to be recognized, but they can be overcome or corrected. A rating of *severe* indicates that the soil has serious limitations that are difficult to overcome. A severe rating, however, does not mean that the soil cannot be used for the specific use.

Discussed in the following paragraphs are the properties considered in rating the limitations to each of the uses given in table 8.

Disposal of effluent from septic tanks.—Considered in rating the soils according to their limitations to use for disposing of effluent from septic tanks were the depth to the water table, the texture of the soil material, the depth to and kind of bedrock, permeability, rate of percolation, hazard of flooding, the degree of the slope and its effect on the ground water, and the presence of a fragipan.

TABLE 8.—*Estimated degree and kinds of*

Soil series and map symbols	Community facilities				
	Disposal of sewage effluent from septic tanks	Sewage lagoons	Dumps and junkyards	Earth-covered fallout shelters	Houses with basements
Adams:					
AaB	Moderate: rapid permeability; contamination of ground water.	Severe: rapid permeability.	Severe: rapid permeability; contamination of ground water.	Slight	Moderate: poor compaction.
AaC	Moderate: slope	Severe: rapid permeability.	Severe: rapid permeability; contamination of ground water.	Slight	Severe: slope; erodible; unstable; poor compaction.
AaD	Severe: slope	Severe: rapid permeability.	Severe: rapid permeability; slope; erodible.	Slight	Severe: slope; erodible; unstable; poor compaction.
Bangor:					
BaB	Moderate: moderate permeability in subsoil and substratum; silty.	Moderate: moderate permeability in subsoil and substratum.	Slight	Slight	Moderate: moderate permeability in subsoil and substratum.
BaC2	Moderate: moderate permeability in subsoil and substratum; silty; slope.	Severe: slope	Moderate: slope; surface drainage.	Slight	Moderate: erodible; moderate permeability in subsoil and substratum.
BgB	Moderate: moderate permeability in subsoil and substratum; silty.	Moderate: moderate permeability in subsoil and substratum; stones.	Slight	Slight	Slight: moderate permeability in subsoil and substratum.
BgC	Moderate: moderate permeability in subsoil and substratum; silty; slope.	Severe: slope.	Moderate: slope; surface drainage.	Slight	Moderate: erodible; stones; moderate permeability in subsoil and substratum.
BgD	Severe: slope	Severe: slope	Severe: slope; surface drainage.	Slight	Severe: erodible; stones; slope; moderate permeability in subsoil and substratum.
Berkshire:					
BhB	Slight	Severe: moderately rapid to rapid permeability; slope.	Slight	Slight	Slight
BhC	Moderate: slope	Severe: moderately rapid to rapid permeability; slope.	Moderate: slope; surface drainage.	Slight	Moderate: slope
BkB	Slight	Severe: moderately rapid to rapid permeability; slope; stones.	Slight	Slight	Slight

limitations for town and country planning

Community facilities—Continued	Recreational facilities					
	Campsites					
Cemeteries	Tent, trailer, and picnic areas	Cottages for seasonal use	Intensive play areas and shooting ranges	Golf fairways	Unpaved access roads and parking areas	Ski areas
Moderate: droughty; difficult to maintain sod.	Moderate: droughty; difficult to maintain sod.	Moderate: droughty; difficult to maintain sod; contamination of ground water.	Severe: droughty; difficult to maintain sod.	Severe: droughty; difficult to maintain sod.	Moderate: unstable.	Severe: slope.
Moderate: droughty; difficult to maintain sod; erodible.	Severe: slope	Severe: slope; erodible; difficult to maintain sod; contamination of ground water.	Severe: slope; droughty.	Severe: droughty; difficult to maintain sod.	Moderate: slope; unstable.	Severe: short slope.
Severe: slope; erodible; rapid permeability; difficult to maintain sod.	Severe: slope; erodible.	Severe: slope; erodible; difficult to maintain sod.	Severe: slope; droughty; erodible.	Severe: droughty; erodible.	Severe: slope; unstable; erodible.	Severe: short slope.
Slight	Slight	Slight	Moderate: high susceptibility to frost action; high available moisture capacity.	Slight	Slight	Severe: slope.
Slight	Severe: slope	Moderate: slope.	Severe: slope	Slight	Moderate: slope; erodible.	Moderate: slope.
Severe: stones	Severe: stones	Moderate: stones.	Severe: stones; slope.	Severe: stones; slope.	Slight	Severe: slope.
Severe: stones; slope.	Severe: stones; slope.	Moderate: stones; slope.	Severe: stones; slope.	Severe: stones; slope.	Moderate: stones; slope.	Moderate: slope.
Severe: stones; slope.	Severe: stones; slope.	Severe: stones; slope.	Severe: stones; slope.	Severe: stones; slope.	Severe: stones; slope:	Slight.
Slight	Slight	Slight	Slight	Slight	Slight	Severe: slope.
Slight	Severe: slope	Moderate: slope.	Severe: slope	Slight	Moderate: slope.	Moderate: slope.
Severe: stones	Severe: stones	Moderate: stones.	Severe: stones	Severe: stones	Moderate: stones.	Severe: slope.

TABLE 8.—*Estimated degree and kinds of limitations*

Soil series and map symbols	Community facilities				
	Disposal of sewage effluent from septic tanks	Sewage lagoons	Dumps and junkyards	Earth-covered fallout shelters	Houses with basements
BkC	Moderate: slope; stones.	Severe: slope; stones.	Moderate: slope; surface drainage.	Slight	Moderate: slope; stones.
BkE	Severe: stones; slope.	Severe: slope; stones.	Severe: slope	Slight	Severe: slope; stones.
Biddeford:					
Bo	Severe: slow to very slow permeability in subsoil; high water table.	Slight	Severe: high water table.	Severe: high water table; seepage.	Severe: high water table; low shear strength.
Buxton:					
BuB	Severe: slow to very slow permeability in subsoil.	Slight	Slight	Severe: seasonal high water table.	Severe: low shear strength.
BuC2	Severe: slow to very slow permeability in subsoil.	Severe: slope	Moderate: slope; erodible; runoff.	Severe: seasonal high water table.	Severe: low shear strength.
Colton:					
CnC	Moderate: slope; contamination of ground water.	Severe: rapid permeability in subsoil.	Severe: contamination of ground water; rapid permeability.	Slight	Moderate: slope
CnD	Severe: slope; contamination of ground water.	Severe: slope; rapid permeability in subsoil.	Severe: contamination of ground water; rapid permeability.	Slight	Severe: slope
CnE	Severe: slope; contamination of ground water.	Severe: slope; rapid permeability in subsoil.	Severe: contamination of ground water; rapid permeability.	Slight	Severe: slope
Dixmont:					
DxB	Severe: moderately slow permeability in substratum; seasonal high water table.	Moderate: seepage; slope.	Slight	Severe: seasonal high water table; seepage; high susceptibility to frost action.	Severe: seasonal high water table; high susceptibility to frost action; seepage.
DxC	Severe: moderately slow permeability in substratum; seasonal high water table; slope.	Severe: slope; seepage.	Moderate: slope; surface drainage.	Severe: seasonal high water table; high susceptibility to frost action; seepage.	Severe: seasonal high water table; seepage; high susceptibility to frost action.
DyB	Severe: moderately slow permeability in substratum; seasonal high water table; stones.	Moderate: seepage; stones; slope.	Slight	Severe: seasonal high water table; seepage; high susceptibility to frost action.	Severe: seasonal high water table; high susceptibility to frost action; stones; seepage.

for town and country planning—Continued

Community facilities—Continued	Recreational facilities					
	Campsites		Intensive play areas and shooting ranges	Golf fairways	Unpaved access roads and parking areas	Ski areas
Cemeteries	Tent, trailer, and picnic areas	Cottages for seasonal use				
Severe: stones	Severe: stones; slope.	Moderate: stones.	Severe: slope; stones.	Severe: stones	Severe: stones; slope.	Moderate: slope.
Severe: stones; slope.	Severe: stones; slope.	Severe: stones; slope.	Severe: stones; slope.	Severe: slope; stones.	Severe: slope; stones.	Slight.
Severe: high water table.	Severe: high water table; slow to very slow permeability; excess water.	Severe: low shear strength; high water table; slow to very slow permeability.	Severe: high water table.	Severe: high water table; high content of clay.	Severe: high water table; frost heaving.	Severe: slope.
Severe: seasonal high table.	Severe: wetness; slow to very slow permeability; unstable when wet.	Severe: slow to very slow permeability; high susceptibility to frost action; low shear strength.	Moderate: high content of silt and clay; dries slowly after a rain.	Moderate: soft when wet; dries slowly after a rain.	Severe: high susceptibility to frost action; low shear strength.	Severe: short slope.
Severe: seasonal high water table.	Severe: slope; slow to very slow permeability; unstable when wet.	Severe: slow to very slow permeability; high susceptibility to frost action; low shear strength; erodible.	Severe: wetness; slope.	Moderate: soft when wet; dries slowly after a rain.	Severe: high susceptibility to frost action; low shear strength; erodible.	Severe: short slope.
Moderate: droughty; difficult to maintain sod.	Severe: slope; droughty; difficult to maintain sod.	Severe: slope; droughty; difficult to maintain sod.	Severe: droughty; slope.	Moderate: droughty; difficult to maintain sod.	Moderate: slope.	Severe: short slope.
Severe: droughty; difficult to maintain sod.	Severe: droughty; slope.	Severe: slope; droughty.	Severe: droughty; slope.	Severe: slope; droughty; difficult to maintain sod.	Severe: slope	Severe: short slope.
Severe: slope; droughty; difficult to maintain sod.	Severe: droughty; slope.	Severe: slope; droughty.	Severe: droughty; slope.	Severe: droughty; slope.	Severe: slope	Severe: short slope.
Severe: seasonal high water table.	Moderate: seasonal high water table.	Moderate: seasonal high water table.	Severe: wetness; dries slowly.	Moderate: wetness.	Moderate: seasonal high water table; high susceptibility to frost action.	Severe: slope.
Severe: seasonal high water table.	Severe: seasonal high water table; slope.	Moderate: seasonal high water table.	Severe: wetness; slope.	Moderate: wetness.	Severe: seasonal high water table; slope; high susceptibility to frost action.	Moderate: slope.
Severe: seasonal high water table; stones.	Severe: seasonal high water table; stones.	Moderate: seasonal high water table.	Severe: wetness; stones.	Severe: wetness; stones.	Moderate: seasonal high water table; stones; high susceptibility to frost action.	Severe: slope.

TABLE 8.—*Estimated degree and kinds of limitations*

Soil series and map symbols	Community facilities				
	Disposal of sewage effluent from septic tanks	Sewage lagoons	Dumps and junkyards	Earth-covered fallout shelters	Houses with basements
DyC	Severe: moderately slow permeability in substratum; seasonal high water table; slope; stones.	Severe: seepage; slope; stones.	Moderate: slope; surface drainage.	Severe: seasonal high water table; seepage; high susceptibility to frost action.	Severe: seasonal high water table; slope; high susceptibility to frost action; seepage.
Dune land: Dz	Severe: unstable	Severe: rapid permeability.	Severe: rapid permeability; contamination of ground water.	Severe: unstable	Severe: high consolidation; unstable.
Hadley: Ha	Severe: occasional flooding.	Severe: moderate permeability; occasional flooding.	Severe: occasional flooding.	Severe: occasional flooding.	Severe: occasional flooding.
Leicester: Lc	Severe: high water table; seasonal excess water.	Moderate: high water table; stones.	Severe: high water table; seasonal excess water.	Severe: high water table.	Severe: high water table; seasonal excess water.
Limerick: Lk	Severe: high water table; frequent flooding.	Severe: high water table; frequent flooding.	Severe: high water table; frequent flooding.	Severe: high water table; frequent flooding.	Severe: high water table; frequent flooding.
Lyman: LyB	Severe: shallow to bedrock.	Severe: shallow to bedrock.	Severe: shallow to bedrock; contamination of ground water.	Severe: shallow to bedrock.	Severe: shallow to bedrock.
LyC	Severe: shallow to bedrock.	Severe: shallow to bedrock; slope.	Severe: shallow to bedrock; contamination of ground water.	Severe: shallow to bedrock.	Severe: shallow to bedrock.
LzC	Severe: shallow to bedrock; stones.	Severe: shallow to bedrock; slope.	Severe: shallow to bedrock; contamination of ground water.	Severe: shallow to bedrock.	Severe: shallow to bedrock.
LzE	Severe: shallow to bedrock; stones.	Severe: shallow to bedrock; slope; stones.	Severe: shallow to bedrock; contamination of ground water.	Severe: shallow to bedrock.	Severe: shallow to bedrock.
Madawaska: MbB	Severe: seasonal high water table.	Severe: moderately rapid permeability; fluctuating water table.	Severe: contamination of ground water.	Severe: seasonal high water table.	Severe: seasonal high water table.

for town and country planning—Continued

Community facilities—Continued	Recreational facilities					
	Campsites					
Cemeteries	Tent, trailer, and picnic areas	Cottages for seasonal use	Intensive play areas and shooting ranges	Golf fairways	Unpaved access roads and parking areas	Ski areas
Severe: seasonal high water table; stones.	Severe: seasonal high water table; stones; slope.	Moderate: seasonal high water table.	Severe: wetness; slope; stones.	Severe: wetness; stones.	Severe: seasonal high water table; slope; stones; high susceptibility to frost action.	Moderate: slope.
Severe: sloughing; unstable; droughty.	Severe: unstable; droughty.	Severe: unstable; droughty.	Severe: unstable; droughty.	Severe: unstable; droughty.	Severe: unstable.	Severe: slope.
Severe: flooding---	Severe: occasional flooding.	Severe: occasional flooding.	Moderate: occasional flooding.	Moderate: occasional flooding.	Moderate: occasional flooding; moderate susceptibility to frost action.	Severe: slope.
Severe: high water table.	Severe: high water table; seasonal excess water.	Severe: high water table; stones.	Severe: high water table; stones.	Severe: high water table; stones; seasonal excess water.	Severe: high water table; susceptibility to frost action; seasonal excess water.	Severe: slope.
Severe: high water table; frequent flooding.	Severe: frequent flooding.	Severe: frequent flooding.	Severe: high water table; frequent flooding.	Severe: excess water; frequent flooding.	Severe: frequent flooding.	Severe: slope.
Severe: shallow to bedrock.	Severe: shallow to bedrock.	Severe: Shallow to bedrock; rock outcrops.	Severe: droughty; rock outcrops.	Severe: droughty.	Slight----------	Severe: slope.
Severe: shallow to bedrock.	Severe: shallow to bedrock; slope.	Severe: shallow to bedrock; slope.	Severe: slope---	Severe: droughty.	Severe: shallow to bedrock; slope.	Moderate: slope.
Severe: shallow to bedrock.	Severe: shallow to bedrock.	Severe: shallow to bedrock; stones.	Severe: droughty; stones.	Severe: shallow to bedrock; stones.	Severe: shallow to bedrock.	Moderate: rock outcrops.
Severe: shallow to bedrock.	Severe: shallow to bedrock; stones; slope.	Severe: shallow to bedrock; slope; stones.	Severe: slope; stones.	Severe: shallow to bedrock; slope; stones.	Severe: slope; shallow to bedrock.	Moderate: rock outcrops.
Moderate: seasonal high water table.	Moderate: seasonal wetness.	Moderate: seasonal high water table.	Moderate: seasonal wetness.	Moderate: seasonal wetness.	Moderate: seasonal high water table.	Severe: slope.

TABLE 8.—*Estimated degree and kinds of limitations*

Soil series and map symbols	Community facilities				
	Disposal of sewage effluent from septic tanks	Sewage lagoons	Dumps and junkyards	Earth-covered fallout shelters	Houses with basements
Melrose:					
MeB	Severe: slow permeability in substratum.	Slight	Slight	Slight	Severe: slow permeability in substratum; low shear strength.
Mixed alluvial land:					
Mn	Severe: high water table.	Severe: frequent flooding.	Severe: frequent flooding.	Severe: high water table.	Severe: high water table.
Monarda:					
Mo	Severe: slow permeability in subsoil.	Slight	Severe: high water table.	Severe: high water table.	Severe: high water table.
Mr	Severe: slow permeability in subsoil.	Slight	Severe: high water table.	Severe: high water table.	Severe: high water table.
Peat and muck:					
Pa	Severe: very high water table.	Severe: very high water table.	Severe: very high water table.	Severe: very high water table.	Severe: very high water table.
Peru:					
PcB	Severe: seasonal high water table; moderately slow permeability.	Moderate: seepage; slope.	Slight	Moderate: seepage.	Severe: moderately slow permeability; seepage.
PdB	Severe: seasonal high water table; moderately slow permeability; stones.	Moderate: seepage; slope; stones.	Slight	Moderate: seepage.	Severe: moderately slow permeability; seepage.
PdC	Severe: seasonal high water table; moderately slow permeability; slope; stones.	Severe: slope; seepage; stones.	Moderate: surface drainage.	Moderate: seepage.	Severe: moderately slow permeability; seepage.
Plaisted:					
PgB	Severe: moderately slow permeability.	Moderate: seepage.	Slight	Slight	Severe: moderately slow permeability.
PgC	Severe: moderately slow permeability; slope.	Severe: slope; seepage.	Moderate: seepage.	Slight	Moderate: moderately slow permeability.
PrB	Severe: moderately slow permeability; stones.	Moderate: seepage; stones.	Slight	Slight	Severe: moderately slow permeability.
PrC	Severe: moderately slow permeability; stones; slope.	Moderate: seepage; stones; slope.	Moderate: slope; stones.	Slight	Moderate: stones; slope; moderately slow permeability.
PrD	Severe: moderately slow permeability; slope; stones.	Severe: seepage; stones; slope.	Severe: slope; stones.	Slight	Severe: stones; slope; moderately slow permeability.

for town and country planning—Continued

Community facilities—Continued	Recreational facilities					
	Campsites					
Cemeteries	Tent, trailer, and picnic areas	Cottages for seasonal use	Intensive play areas and shooting ranges	Golf fairways	Unpaved access roads and parking areas	Ski areas
Slight	Slight	Slight	Moderate: slope.	Slight	Moderate: moderate susceptibility to frost action; erodible.	Severe: slope.
Severe: high water table.	Severe: frequent flooding.	Severe: frequent flooding.	Severe: frequent flooding.	Severe: frequent flooding.	Severe: frequent flooding.	Severe: slope.
Severe: high water table.	Severe: high water table; excessive seasonal wetness.	Severe: high water table; slow permeability.	Severe: excessive seasonal wetness.	Severe: excessive seasonal wetness; dries slowly after a rain.	Severe: permanent high water table.	Severe: slope.
Severe: high water table; stones.	Severe: wetness; stones.	Severe: high water table; stones; slow permeability.	Severe: excessive seasonal wetness; stones.	Severe: excessive seasonal wetness; stones; dries slowly after a rain.	Severe: permanent high water table; stones.	Severe: slope.
Severe: very high water table.	Severe: very high water table.	Severe: very high water table.	Severe: very high water table.	Severe: very high water table.	Severe: very high water table.	Severe: very high water table.
Severe: seasonal high water table; very firm in substratum.	Moderate: seasonal wetness.	Moderate: seasonal wetness.	Severe: seasonal wetness.	Moderate: seasonal wetness.	Moderate: seasonal high water table.	Severe: slope.
Severe: seasonal high water table; very firm in substratum.	Severe: seasonal wetness.	Moderate: seasonal wetness.	Severe: seasonal wetness; stones.	Severe: seasonal wetness; stones.	Moderate: seasonal high water table; stones.	Severe: slope.
Severe: slope; stones; high water table; very firm in substratum; stones.	Severe: slope; stones.	Severe: stones; high water table.	Severe: seasonal wetness; slope; stones.	Severe: slope; stones.	Severe: stones; slope.	Moderate: slope.
Severe: very firm in substratum.	Moderate: moderately slow permeability.	Moderate: moderately slow permeability.	Slight	Slight	Moderate: seepage in compact layer; moderately slow permeability.	Severe: slope.
Severe: very firm in substratum; stones.	Severe: slope; moderately slow permeability.	Moderate: slope; moderately slow permeability.	Severe: slope	Slight	Moderate: slope; seepage in compact layer.	Moderate: slope.
Severe: very firm in substratum.	Severe: stones; moderately slow permeability.	Moderate: stones; moderately slow permeability.	Severe: stones	Severe: stones	Moderate: stones; seepage in compact layer.	Severe: slope.
Severe: stones; very firm in substratum.	Severe: slope; stones; moderately slow permeability.	Severe: stones; slope; moderately slow permeability.	Severe: slope; stones.	Severe: slope; stones.	Severe: stones; slope; seepage.	Moderate: slope.
Severe: slope; stones; very firm in substratum.	Severe: slope; stones.	Severe: slope; stones.	Severe: slope; stones.	Severe: slope; stones.	Severe: slope; stones; seepage.	Slight.

TABLE 8.—*Estimated degree and kinds of limitations*

Soil series and map symbols	Community facilities				
	Disposal of sewage effluent from septic tanks	Sewage lagoons	Dumps and junkyards	Earth-covered fallout shelters	Houses with basements
Rock land:					
RtC	Severe: shallow to bedrock; rock outcrops.	Severe: shallow to bedrock; rock outcrops.	Severe: shallow to bedrock.	Severe: shallow to bedrock.	Severe: shallow to bedrock; rock outcrops.
RtE (Limitations to use of the Thorndike and the Lyman soils in mapping units RtC and RtE are the same as for Rock land.)	Severe: shallow to bedrock; slope.	Severe: shallow to bedrock; slope.	Severe: shallow to bedrock; slope.	Severe: shallow to bedrock.	Severe: shallow to bedrock; slope.
Scantic:					
Sc	Severe: slow to very slow permeability.	Slight	Severe: high water table; ponding.	Severe: high water table; seepage; low shear strength.	Severe: high water table; low shear strength.
Skowhegan:					
Sk	Severe: seasonal high water table.	Severe: rapid to very rapid permeability in substratum; fluctuating water table.	Severe: contamination of ground water.	Severe: seasonal high water table.	Severe: seasonal high water table.
Stetson:					
StB	Moderate: rapid to very rapid permeability in substratum; possible contamination of ground water.	Severe: rapid to very rapid permeability in substratum.	Severe: rapid to very rapid permeability in substratum; possible contamination of ground water.	Slight	Moderate: rapid to very rapid permeability in substratum; possible contamination of ground water.
Suffield:					
SuC2	Severe: slow to very slow permeability in subsoil; slope.	Severe: slope	Moderate: seepage; slope; runoff; erodible.	Slight	Severe: high susceptibility to frost action; unstable subsoil; slow to very slow permeability in subsoil; low shear strength.
SuD2	Severe: slow to very slow permeability in subsoil; slope.	Severe: slope	Severe: slope; seepage; runoff.	Slight	Severe: high susceptibility to frost action; unstable subsoil; slow to very slow permeability in subsoil.

for town and country planning—Continued

Community facilities—Continued	Recreational facilities					
Cemeteries	Campsites		Intensive play areas and shooting ranges	Golf fairways	Unpaved access roads and parking areas	Ski areas
	Tent, trailer, and picnic areas	Cottages for seasonal use				
Severe: shallow to bedrock; rock outcrops.	Severe: shallow to bedrock; rock outcrops.	Severe: shallow to bedrock; rock outcrops.	Severe: shallow to bedrock; slope; rock outcrops.	Severe: shallow to bedrock; slope; rock outcrops.	Severe: shallow to bedrock; rock outcrops.	Severe: rock outcrops.
Severe: shallow to bedrock; slope.	Severe: shallow to bedrock; slope; rock outcrops.	Severe: shallow to bedrock; slope; rock outcrops.	Severe: shallow to bedrock; slope; rock outcrops.	Severe: shallow to bedrock; rock outcrops.	Severe: shallow to bedrock; rock outcrops.	Severe: rock outcrops.
Severe: high water table; ponding.	Severe: slow to very slow permeability; wetness; low shear strength.	Severe: slow to very slow permeability; wetness; high susceptibility to frost action.	Severe: high water table; excessive wetness.	Severe: wetness; high water table.	Severe: high water table; low shear strength.	Severe: slope.
Moderate: seasonal high water table.	Moderate: seasonal wetness.	Moderate: seasonal high water table.	Moderate: seasonal wetness.	Moderate: seasonal wetness.	Moderate: seasonal high water table.	Severe: slope.
Slight	Slight	Moderate: rapid to very rapid permeability in substratum; possible contamination of ground water.	Moderate: droughty; difficult to maintain sod.	Moderate: difficult to maintain sod.	Slight	Severe: slope.
Severe: slope; slow to very slow permeability in subsoil; sticky; plastic.	Severe: slope; slow to very slow permeability in subsoil; erodible.	Moderate: slow to very slow permeability in subsoil; erodible.	Severe: slope	Moderate: soft when wet; erodible.	Severe: high susceptibility to frost action; low shear strength; erodible.	Moderate: short slope; erodible.
Severe: slope; slow to very slow permeability in subsoil; sticky; plastic.	Severe: slope; erodible; slow to very slow permeability in subsoil.	Severe: slope; erodible; slow to very slow permeability in subsoil.	Severe: slope	Severe: slope; soft when wet; erodible.	Severe: slope; high susceptibility to frost action; low shear strength; erodible.	Moderate: short slope; erodible.

TABLE 8.—*Estimated degree and kinds of limitations*

Soil series and map symbols	Community facilities				
	Disposal of sewage effluent from septic tanks	Sewage lagoons	Dumps and junkyards	Earth-covered fallout shelters	Houses with basements
Thorndike:					
TkC	Severe: shallow to bedrock.	Severe: shallow to bedrock.	Severe: shallow to bedrock.	Severe: shallow to bedrock.	Severe: shallow to bedrock; stones.
TkD	Severe: shallow to bedrock; slope.	Severe: shallow to bedrock; slope.	Severe: shallow to bedrock; slope.	Severe: shallow to bedrock.	Severe: shallow to bedrock; stones.
TtB	Moderate: rock outcrops; silty.	Severe: moderate permeability; rock outcrops; shallow to bedrock.	Severe: shallow to bedrock.	Severe: shallow to bedrock; rock outcrops.	Moderate: shallow to bedrock.
TtC	Moderate: rock outcrops; silty.	Severe: moderate permeability; slope; rock outcrops.	Severe: seepage; shallow to bedrock.	Severe: shallow to bedrock; rock outcrops.	Moderate: shallow to bedrock.
TtD	Severe: rock outcrops; slope.	Severe: moderate permeability; slope; rock outcrops; shallow to bedrock.	Severe: slope; shallow to bedrock.	Severe: shallow to bedrock; rock outcrops.	Severe: shallow to bedrock.
TpB	Severe: rock outcrops; slow permeability in substratum.	Severe: moderate to moderately slow permeability in subsoil; rock outcrops; shallow to bedrock.	Severe: seepage; contamination of ground water; shallow to bedrock.	Severe: shallow to bedrock; rock outcrops.	Moderate: shallow to bedrock.
TpC	Severe: rock outcrops; slow permeability in substratum.	Severe: moderate to moderately slow permeability in subsoil; rock outcrops; shallow to bedrock.	Severe: seepage; contamination of ground water; shallow to bedrock.	Severe: shallow to bedrock; rock outcrops.	Moderate: shallow to bedrock.
TpD (Limitations to use of Bangor soils in mapping units TtB, TtC, and TtD and of Plaisted soils in mapping units TpB, TpC, and TpD are the same as for Thorndike.)	Severe: slope; rock outcrops; slow permeability in substratum.	Severe: slope; rock outcrops; shallow to bedrock.	Severe: slope; shallow to bedrock.	Severe: shallow to bedrock; rock outcrops.	Severe: shallow to bedrock.
Walpole:					
Wa	Severe: high water table.	Severe: rapid permeability in subsoil; high water table.	Severe: high water table.	Severe: high water table.	Severe: high water table.
Winooski:					
Wn	Severe: seasonal high water table; occasional flooding.	Severe: moderate permeability in substrata; occasional flooding; seasonal high water table.	Severe: occasional flooding.	Severe: seasonal high water table; occasional flooding.	Severe: occasional flooding; seasonal high water table.

for town and country planning—Continued

Community facilities—Continued	Recreational facilities					
	Campsites					
Cemeteries	Tent, trailer, and picnic areas	Cottages for seasonal use	Intensive play areas and shooting ranges	Golf fairways	Unpaved access roads and parking areas	Ski areas
Severe: shallow to bedrock; stones.	Severe: shallow to bedrock; stones; slope; rock outcrops.	Severe: shallow to bedrock; stones; rock outcrops.	Severe: slope; stones; rock outcrops.	Severe: slope; stones; rock outcrops.	Severe: shallow to bedrock; rock outcrops; stones.	Severe: slope.
Severe: shallow to bedrock; slope; stones.	Severe: shallow to bedrock; slope; stones; rock outcrops.	Severe: shallow to bedrock; slope; stones; rock outcrops.	Severe: slope; stones; rock outcrops.	Severe: slope; stones; rock outcrops.	Severe: shallow to bedrock; rock outcrops; stones; slope.	Moderate: rock outcrops.
Severe: rock outcrops; shallow to bedrock.	Severe: shallow to bedrock; rock outcrops.	Moderate: shallow to bedrock; rock outcrops.	Severe: droughty; rock outcrops; shallow to bedrock.	Moderate: droughty.	Slight	Severe: slope.
Severe: rock outcrops; shallow to bedrock.	Severe: shallow to bedrock; rock outcrops; slope.	Severe: shallow to bedrock; rock outcrops; slope.	Severe: slope; rock outcrops; shallow to bedrock.	Severe: droughty; rock outcrops.	Severe: rock outcrops; slope.	Moderate: slope.
Severe: slope; rock outcrops; shallow to bedrock.	Severe: shallow to bedrock; slope; rock outcrops.	Severe: shallow to bedrock; slope.	Severe: slope	Severe: slope; droughty; rock outcrops.	Severe: slope; rock outcrops.	Slight.
Severe: rock outcrops; irregular depth to bedrock; very firm substratum.	Severe: shallow to bedrock; rock outcrops.	Severe: shallow to bedrock; rock outcrops.	Severe: rock outcrops.	Moderate: rock outcrops.	Slight	Severe: slope.
Severe: rock outcrops; shallow to bedrock; very firm in substratum.	Severe: shallow to bedrock; rock outcrops; slope.	Severe: shallow to bedrock; rock outcrops.	Severe: slope; rock outcrops.	Severe: rock outcrops.	Severe: rock outcrops; slope.	Moderate: slope.
Severe: rock outcrops; shallow to bedrock; very firm in substratum; slope.	Severe: shallow to bedrock; slope.	Severe: shallow to bedrock; slope; rock outcrops.	Severe: slope; rock outcrops.	Severe: rock outcrops; slope.	Severe: slope; rock outcrops.	Slight.
Severe: high water table; gravelly in substratum.	Severe: high water table; excessive wetness.	Severe: high water table; excessive wetness.	Severe: high water table; excessive wetness.	Severe: excessive wetness.	Severe: high water table.	Severe: slope.
Severe: seasonal high water table; occasional flooding.	Severe: occasional flooding.	Severe: occasional flooding; seasonal high water table.	Moderate: occasional flooding.	Moderate: occasional flooding.	Moderate: occasional flooding; high susceptibility to frost action.	Severe: slope.

Sewage lagoons.—Sewage lagoons are ponds built to dispose of sewage through biological decomposition and oxidation. Considered in estimating the ratings given in table 8 were the texture of the soil material, drainage, slope, the hazard of flooding, depth to bedrock, stoniness, and the compaction, permeability, and organic-matter content of the soil.

Dumps and junkyards.—The ratings in table 8 include the need for controlling runoff by diking the lower side of areas used for dumps and junkyards. The degree of the slope on the upper side of the areas was not considered in the ratings, but dumping is easier if the slope is steep. Considered in the ratings were depth and texture of the soil material, drainage, depth to the water table, and the slope.

Earth-covered fallout shelters.—For fallout shelters, at least half of the building should be below the surface and the entire building should have a cover of earth 3 feet thick. The soil properties considered in rating the soils for fallout shelters were depth to bedrock, drainage, the hazard of flooding, depth to the water table, permeability, susceptibility to frost action, stability of the soil, stoniness, and the degree of the slope.

Houses with basements.—The ratings in table 8 are for residential buildings that have a basement, or cellar, and where the disposal of sewage effluent is through septic tanks. Considered in the ratings were the hazard of flooding, depth to the water table and to bedrock, drainage, stability of the soil, the presence of a fragipan, stoniness, permeability, and the degree of the slope.

Cemeteries.—The most favorable soils for cemeteries are those that are at least 6 feet deep, do not have a high water table, are not subject to flooding, and do not have rocks and stones on the surface. In considering the use of soils for cemeteries, the depth to bedrock is especially important and an investigation should be made at the site. Considered in the ratings given in table 8 were the hazard of flooding, depth to the water table, to a fragipan, and to bedrock, texture of the soil material, drainage, and the degree of the slope.

Campsites.—These are areas used for tents, camping trailers, and picnics, and as sites for cottages that are used seasonally and where the disposal of sewage effluent is through septic tanks. Properties to consider when selecting campsites are a hazard of flooding, a seasonal high water table, the depth and stability of the soil material, drainage, permeability, stoniness, and the degree of the slope. Wetness affects the degree of limitation for campsites.

Intensive play areas and shooting ranges.—The ratings in table 8 are for soils used for shooting ranges and for school athletic fields and other intensive play areas. Considered in estimating the ratings were the degree of the slope, stoniness, texture of the surface layer, drainage, the hazard of flooding, depth to the water table, erodibility, and wetness.

Golf fairways.—Considered in rating the soils for golf fairways were drainage, the texture and the available moisture capacity of the soil material, depth to the water table and to bedrock, stability, stoniness, and seasonal wetness. Suitability for putting greens was not considered in the ratings.

Unpaved access road and parking areas.—These are unpaved parking areas and dirt, sand, or gravel roads used to carry traffic to and between recreational areas, buildings, and cottage sites. Soil properties considered in the ratings were the degree of the slope, drainage, texture, stoniness, stability, depth to the water table, susceptibility to frost action, and the hazard of flooding.

Ski areas.—The ratings in table 8 are for areas that can be developed and maintained for skiing when the ground is frozen and covered by snow. Considered in the ratings were the degree and length of the slope, stoniness, rockiness, and the erodibility of the soil. The ease or difficulty of maintaining these areas in summer was also considered in the ratings.

Formation and Classification of Soils

In this section the major factors of soil formation are discussed in terms of their effect on the development of the soils in Somerset County: Southern Part. The current system of classification is briefly described, and the soil series in the survey area are placed in some classes of that system and in great soil groups of an older system. The soil series in the survey area, including a profile representative of each series, are described in the section "Descriptions of the Soils."

Formation of Soils

Soil is produced by the interaction of the five major factors of soil formation. These factors are parent material, plant and animal life, climate, relief, and time (*7*). They control or influence the soil-forming processes of additions, losses, transfers, and alterations and determine whether or not a horizon is faint or distinct. Normally the interaction of all the factors determines the kind of soil that develops in any given place, but the relative importance of each factor differs from place to place. In some places one or more of the factors may dominate in the formation of a soil and determine most of its properties.

Soil formation begins with physical weathering. Large pieces of rock are broken into smaller pieces by hydration, differential expansion, frost wedging, and other forces. Glaciers acting as a physical weathering agent ground large quantities of rock material and redistribute this over some areas as heterogeneous material and over other areas as selectively sorted materials (*4*). Most of the soils in Somerset County developed in this predigested glacial till or outwash material. Organic matter is added to this material when plants and animals die.

The rock fragments and the organic matter are chemically weathered by solution, oxidation, reduction, carbonation, and the action of weak acids, enzymes, and other known and unknown chemical processes. Through chemical processes, nitrogen, phosphorus, potassium, sulfur, calcium, magnesium, iron, molybdenum, zinc, manganese, and other elements are released in forms that plants can use. Weathering causes chemical and physical changes in soils. These changes are reflected in the formation of

horizons, or layers, that can be observed in most soils when a vertical cross section of the profile is exposed. The arrangement, color, thickness, consistence, structure, and other chemical and physical characteristics of these horizons are used as the basis for identifying and classifying soils.

Parent material

Parent material, the unconsolidated mass from which soils form, determines, to a large extent, the mineralogical and chemical composition of soils. It also affects the rate at which the soil-forming processes take place.

The soils of this survey area formed in glacial till, marine or lacustrine deposits, glacial outwash material, recent alluvium deposited by streams, and accumulations of organic material. Most of the soil material was left when the last ice sheet, or glacier, melted about 8,000 to 12,000 years ago (*3*, *8*). The alluvium is of relative recent origin, and in some places new material is deposited each year.

The most extensive soils in this survey area are those that formed in glacial till. These soils vary in characteristics. The Monarda, Peru, and Plaisted soils are among the soils in the survey area that have a firm substratum. The Bangor, Berkshire, and Dixmont are examples of soils that formed in glacial till. The Adams, Colton, Skowhegan, and Stetson are examples of soils that formed in glacial outwash deposits; they have a sandy solum and are commonly underlain by stratified sand and gravel. Soils of the Hadley, Limerick, and Winooski series are on bottom lands along streams. These soils formed in recent alluvium deposited by the streams; they are medium textured and show only slight profile development. Peat and muck formed in organic material. Deposits of silt and clay that were laid down in small areas once covered by water for a relatively long period are the lacustrine or marine deposits from which the Buxton, Scantic, and Suffield soils formed.

Plant and animal life

Plants, animals, bacteria, fungi, and other forms of life that live on and in the soils are active in the soil-forming processes. The plant cover is generally responsible for the amount of organic matter and nutrients in the soil and also for the color of the surface layer.

Earthworms, cicada, and burrowing animals help to keep the soil open and porous. Bacteria and fungi decompose the vegetation and release nutrients for plants. The native forests have influenced soil formation in this survey area more than other living organisms. Man, however, has affected the development of the soils by clearing the forests, cultivating the soils, adding fertilizer, mixing some of the soil horizons, and even moving soil material from place to place.

Climate

Temperature, precipitation, and wind are climatic factors that have affected the formation of soils in this survey area. The climate influences the rate of weathering and the decomposition of rocks, minerals, and organic matter. It also influences the kinds and growth of plants and animals in and on the soil, which in turn, affects the characteristics of the soils (*12*). Climatic data for this survey area are given in the section "Climate," beginning on page 69.

This survey area has a cool, continental climate that is modified by southerly winds that pass over the Atlantic Ocean. Seasonal changes in temperature are not so extreme in this survey area as are typical for a continental type of climate. The mean annual air temperature is about 43° F., and the average precipitation during the growing season, May through September, ranges from 2.75 to 5.8 inches per month.

Relief

Relief, including direction of slope, affects soil formation through its influence on drainage, runoff, erosion, plant cover, and soil temperature. The topography of this survey area is nearly level to very steep, and the slopes range from 0 to 45 percent.

Relief affects the depth of soils. Steep soils generally are shallower than the more nearly level ones. This is because runoff is more rapid and erosion is greater on the steep soils. Runoff is slow or ponded on the nearly level soils, and these soils are poorly drained or very poorly drained. Slopes that face south or west receive more direct sunshine and are warmer than slopes that face north or east. The permeability of the soil material and the length, steepness, and configuration of the slopes influence the kind of soil that is formed from place to place. Local differences in soils are most commonly caused by the differences in parent material and topography.

The effect of relief on the soils in this survey area is reflected in the deep, gently rolling Bangor, Dixmont, Melrose, and Plaisted soils on uplands in the eastern and central parts of the survey area. Peat and muck are examples of the deep, wet organic soils in nearly level or depressional areas in the southeastern part of the survey area or in small concave areas throughout the survey area. Relief is also an important factor in the lack of soil formation in some steep, rocky areas. Examples are Rock land and the shallow, rocky Lyman and Thorndike soils that occur in the western part of the survey area.

Time

Time is required for the formation of soils. The length of time that the parent material has been in place is commonly reflected in the degree that the soil profile has developed. The soils in this survey area have been forming since the retreat of the last glaciers about 8,000 to 12,000 years ago (*3*).

The degree of profile development and the depth of the soil material generally indicate the age of a soil. Most of the soils on the flood plains are considered to be young because they receive new sediments in periodic floods, and well-defined horizons have not had time to form; soil structure is weak; and the differences in the color of the horizons are only slight. Soils of the Hadley series are examples of soils that formed on flood plains; organic matter has accumulated on the surface of these soils, but the soil material has been changed only slightly by weathering. Some of the soils on glacial till show a strong degree of weathering, such as the Peru and Berk-

shire soils, but the depth of the weathering is only about 30 inches. These soils are considered to be older than the Hadley soils.

Processes of Soil Formation

A soil profile is a succession of layers, or horizons, that extend from the soil surface downward. Adjacent horizons in a profile differ in one or more properties. These differences show the effect that the soil-forming processes had on the development of horizons.

Most soil profiles have three major horizons, called the A, B, and C (*2*, *14*). The A horizon is the surface layer. It is either the layer of maximum organic matter, called the A1 horizon, or the layer of maximum leaching or eluviation of clay, iron, and organic matter called the A2 horizon. The A2 horizons of some of the soils in this survey are whitish, which indicates intensive leaching.

The B horizon is below the A horizon and is commonly called the subsoil. It generally is a horizon of maximum accumulation or illuviation of clay, iron, aluminum, organic matter, or other compounds that have been leached from the A horizon; in some soils part of the B horizon is formed by alteration in place instead of from illuviation. The alteration may be due to oxidation and reduction of iron or the weathering of clay minerals. The B horizon has blocky or prismatic structure and is generally lighter colored than the A1 horizon, but it is darker than the C horizon.

The C horizon consists of material that has been only slightly altered by the processes of soil formation, but it may have been slightly modified by weathering.

Several processes were involved in the formation of soil horizons in the soils of this survey area. These processes include the accumulation of organic matter, the leaching of soluble salts, the reduction and transfer of iron, the formation of soil structure, and some translocation and loss of clay minerals, aluminum, silica, and iron. These processes are continually taking place and generally at the same time throughout the profile. Time for these processes is measured in thousands of years.

The accumulation of organic matter in the upper part of the profile results in a dark-colored surface layer and in the formation of an A1 horizon. The content of organic matter in the uneroded soils of this survey area generally is more than 3 percent.

The well drained and moderately well drained soils in this survey area have a dark reddish-brown to olive-brown subsoil. The reddish colors are caused mainly by thin coats of iron oxides and organic matter on the grains of sand and silt grains; in this survey area no reddish parent materal has been found from which the soils could have inherited the reddish colors. Some soils have weak to moderate, subangular blocky structure, but the subsoil contains only slightly more or no more clay than the surface horizons.

Most of the moderately well drained and the somewhat poorly drained soils in this survey area have a fragipan in the subsoil. The fragipan is very firm and brittle when moist and is hard when dry. The soil particles are tightly packed so that the bulk density is high and the pore space is low. The genesis of these horizons is not fully understood but studies show that some swelling and shrinkage take place in alternating wet and dry periods. These may account for the tight packing of soil particles and also for a gross polygonal pattern of cracks in the fragipan. Clay, silica, and oxides of aluminum are the most likely cementing agents causing brittleness and hardness (*6*).

Classification of Soils

Soils are classified so that their significant characteristics can be more easily remembered. Classification enables us to assemble knowledge about the soils, to see their relationship to one another and to the whole environment, and to develop principles that help us to understand their behavior and their response to manipulation. First through classification and then through the use of soil maps, we can apply knowledge of soils to specific fields and other tracts of land.

Two systems of classifying soils have been used in the United States in recent years. The older system was adopted in 1938 (*2*) and was later revised (*11*). The system currently used was adopted for general use by the National Cooperative Soil Survey in 1965 and is under continual study. Readers interested in developments of this system should refer to the latest literature available (*9*, *15*). In table 9 the soil series of Somerset County: Southern Part, are placed in some categories of the current system and in the great soil groups of the older system.

The current system of classification has six categories. Beginning with the broadest, these categories are order, suborder, great group, subgroup, family, and series. In this system soil properties that are observable and measurable are used as a basis for classification. The properties are chosen so that the soils of similar genesis, or the way they formed, are grouped together. Except for soil series, the classes that make up the current system are briefly defined in the following paragraphs. Soil series is defined in the section "How This Soil Survey Was Made."

ORDER: Ten soil orders are recognized in this system. They are Alfisols, Aridisols, Entisols, Histosols, Inceptisols, Mollisols, Oxisols, Spodosols, Ultisols, and Vertisols. The properties used to differentiate the soil orders are those that tend to give broad climatic groupings of soils. The exceptions are the Entisols, Histosols and, to some extent, the Inceptisols, which occur in many climates. Two of the soil orders are represented in this survey area. They are Inceptisols and Spodosols.

Inceptisols are mineral soils in which horizons have definitely started to develop. They generally are on young, but not recent, land surfaces.

Spodosols are soils that have, at or near the surface, a horizon in which iron and aluminum oxides have accumulated, as well as some organic carbon, but little or no additional clay.

SUBORDER: Each order is subdivided into suborders, primarily on the basis of those soil characteristics that seem to produce classes with the greatest genetic similarities. The suborder narrows the broad climatic range permitted in the orders. The soil properties used to separate suborders mainly reflect either the presence or absence of

TABLE 9.—*Soil series classified according to the current system of classification and the 1938 system with later revisions*

Series	Current classification			1938 classification with later revisions
	Family	Subgroup	Order	Great soil group
Adams	Sandy, mixed, frigid	Typic Haplorthods	Spodosols	Podzols.
Bangor	Coarse-loamy, mixed, frigid	Typic Haplorthods	Spodosols	Podzols.
Berkshire	Coarse-loamy, mixed, frigid	Typic Haplorthods	Spodosols	Podzols.
Biddeford	Fine, mixed, mesic	Histic Humaquepts	Inceptisols	Humic Gley soils.
Buxton	Fine-silty, mixed, mesic	Aquic Dystric Eutrochrepts	Inceptisols	Brown Podzolic soils.
Colton	Sandy-skeletal, mixed, frigid	Typic Haplorthods	Spodosols	Podzols.
Dixmont	Coarse-loamy, mixed, frigid	Aquic Haplorthods	Spodosols	Podzols.
Hadley	Coarse-silty, mixed, mesic	Fluventic Dystrochrepts	Inceptisols	Alluvial soils.
Leicester	Coarse-loamy, mixed, acid, mesic	Typic Haplaquepts	Inceptisols	Low-Humic Gley soils.
Limerick	Coarse-silty, mixed, nonacid, mesic	Fluventic Haplaquepts	Inceptisols	Alluvial soils.
Lyman	Loamy, mixed, frigid	Lithic Haplorthods	Spodosols	Podzols.
Madawaska	Coarse-loamy, mixed, frigid	Aquic Haplorthods	Spodosols	Podzols.
Melrose	Coarse-loamy over clayey, mixed, mesic	Entic Haplorthods	Spodosols	Brown Podzolic soils.
Monarda	Coarse-loamy, mixed, nonacid, frigid	Aeric Fragiaquepts	Inceptisols	Low-Humic Gley soils.
Peru	Coarse-loamy, mixed, frigid	Aquic Fragiorthods	Spodosols	Podzols.
Plaisted	Coarse-loamy, mixed, frigid	Typic Fragiorthods	Spodosols	Podzols.
Scantic	Fine, illitic, nonacid, mesic	Typic Haplaquepts	Inceptisols	Low-Humic Gley soils.
Skowhegan	Sandy, mixed, frigid	Aquic Haplorthods	Spodosols	Podzols.
Stetson	Loamy-skeletal, mixed, frigid	Typic Haplorthods	Spodosols	Podzols.
Suffield	Coarse-silty over clayey, mixed, mesic	Entic Haplorthods	Spodosols	Brown Podzolic soils.
Thorndike	Loamy, mixed, frigid	Lithic Haplorthods	Spodosols	Podzols.
Walpole	Sandy, mixed, mesic	Aeric Haplaquepts	Inceptisols	Low-Humic Gley soils.
Winooski	Coarse-silty, mixed, mesic	Aquic Fluventic Dystrochrepts	Inceptisols	Alluvial soils.

waterlogging or soil differences resulting from the climate or vegetation.

GREAT GROUP: Suborders are separated into great groups on the basis of uniformity in the kinds and sequence of major soil horizons and features. The horizons used to make separations are those in which clay, iron, or humus has accumulated, or those that have pans that interfere with the growth of roots or the movement of water. The features used are the self-mulching properties of clay, soil temperature, major differences in chemical composition (mainly calcium, magnesium, sodium, and potassium), and the like. The great group is not shown in table 9, because it is the last word in the name of the subgroup.

SUBGROUP: Great groups are subdivided into subgroups, one that represents the central, or typic, segment of a group, and the others, called intergrades, contain those soils that have properties mostly of one great group, but also one or more properties of soils in another great group, suborder, or order. Subgroups may also be made in those instances where soil properties intergrade outside of the range of any other great group, suborder or order.

FAMILIES: Families are separated within a subgroup primarily on the basis of properties important to the growth of plants or the behavior of soils when used for engineering. Among the properties considered are texture, mineralogy, reaction, soil temperature, permeability, thickness of horizons, and consistence. A family name consists of a series of adjectives preceding the subgroup name. Table 9 gives the family of each of the series represented in this survey area, though some family designations may be changed as more information is obtained.

Laboratory Data

Samples of the Berkshire, Peru, and Skowhegan soils were taken at selected sites in this survey area and were analyzed in the laboratory. Samples of the Berkshire and Peru soils were taken at five sites and those of the Skowhegan soils were taken at one site. Data obtained from these samples are shown in the Maine Agricultural Experiment Station Technical Bulletin No. 29 (*17*). The data are applicable to the Bangor, Dixmont, Plaisted, and other soils in the survey area that have properties similar to those of the soils tested. The Berkshire, Peru, and Skowhegan soils make up about 16 percent of this survey area, and the similar soils make up about 24 percent. The data obtained from the samples are applicable to about 40 percent of the survey area.

Climate[4]

The climate in this survey area is predominantly continental, and it is characterized by cool to moderately warm summers, fairly cold winters, and ample rainfall. Winds from the Atlantic Ocean affect the weather occasionally, but the influence of the ocean decreases as the winds move northward. The ocean affects the weather more in summer than in winter because the prevailing winds are southerly in summer and northerly and westerly in winter. The temperature varies from winter to summer, from year to year, and from day to night. Day-to-day varia-

[4] By R. E. LAUTZENHEISER, State climatologist, Weather Bureau, Environmental Science Services Administration, Boston, Mass.

tions are common because this survey area is near the path of weather systems that alternately bring warm air from the south and cold air from the north. Data on temperature and precipitation for the survey area are given in table 10 and are from the records kept at Madison.

The temperature data in table 10 do not include the extreme high and low temperatures of record, but they do include temperatures that can be expected to occur on 4 days a month for 2 years in 10. These probable temperatures, however, differ only slightly from the average monthly extremes. They can be used to estimate temperature extremes to be expected for a given month each year, and they may be more useful than extreme temperatures for planning purposes.

Temperature.—Throughout the survey area the mean temperature is 60° F. or higher in June, July, and August. In the cities or larger towns and at low elevations in the southern part of the survey area, the mean temperature is about 70° in July, the warmest month, and is about 20° in January, the coldest month. In the rural areas, especially at high elevations in the northern part of the survey area, the mean temperature is about 65° in July and is about 15° in January. In an average summer, the number of days when the temperature reaches 90° ranges from 1 to 3 at the highest elevations in the northern part of the survey area and from 4 to 8 in the southern part of the survey area. The temperature does not reach 90° in some summers, but in the warmest summers a temperature of 90° has been recorded on 15 to 20 days. Nights are nearly always cool, even in the warmest summers.

Table 11 shows, by months, the average frequency of specified temperatures and the number of heating degree-days and of growing degree-days. The degree days are computed by recording each day the significant departure from a selected temperature base and then totaling these departures for the month, and for the year. The temperature selected as a base, the departures to be recorded, and the method used to compute the numbers of degree-days depend on the purpose of the computation. For example, in computing the heating degree-days, a base of 65° F. is used because it is the lowest mean daily temperature at which no heat is required for homes. To obtain the departure for 1 day, the actual mean temperature, if less than 65°, is subtracted from 65°. For example, a day with a mean temperature of 55° has 10 heating degree-days. A day with a mean temperature of 65° or higher, however, has no heating degree-days because no heat is required. Heating degree-days are useful in calculating the amount of fuel needed in an average year and in comparing a particular season with the average. They are used by gas, electric, and fuel companies in estimating fuel and power requirements.

Data on the growing degree-days are useful in planning the dates for planting and harvesting crops. The growing degree-days accumulate when the mean temperature is higher than the lowest minimum, or base, temperature, at which plants continue to grow. They are calculated by subtracting this base temperature from the actual mean temperature for the day; no negative values are used. In computing the growing degree-days given in table 11, a base of 40° F. is used for grasses, potatoes, peas, and other cool-weather crops, and a base of 50° is used for warm-weather crops. Thus, a day on which the mean temperature is 60° has a value of 20 growing

TABLE 10.—*Temperature and precipitation data at Madison*

[Elevation, 260 feet]

Month	Temperature					Precipitation						
	Average daily—			Two years in 10 will have at least 4 days with—		Average total	One year in 10 will have—		Average total snowfall	Number of days with—		
	Maximum	Minimum	Mean	Maximum temperature equal to or higher than—	Minimum temperature equal to or lower than—		Less than—	More than—		Snowfall of 1 inch or more	Snow cover of 1 inch or more	Precipitation of 0.10 inch or more
	°F.	°F.	°F.	°F.	°F.	Inches	Inches	Inches	Inches			
January	28.4	6.4	17.4	42	−16	3.21	1.3	6.4	21.0	6	30	7
February	31.4	7.7	19.6	42	−16	2.77	1.1	5.0	18.7	6	28	6
March	40.1	18.4	29.3	54	−1	3.17	1.3	5.8	15.0	4	28	7
April	52.7	30.1	41.4	70	18	3.23	1.5	4.9	4.9	2	7	7
May	66.7	40.1	53.4	82	29	3.31	1.2	5.8	.4	(1)	(1)	7
June	75.5	50.0	62.8	89	39	3.28	1.3	5.2	0	0	0	7
July	80.6	55.7	68.2	89	45	3.27	1.3	4.8	0	0	0	7
August	79.2	53.7	66.5	90	42	2.75	.9	5.1	0	0	0	6
September	70.3	46.0	58.2	86	32	3.04	1.3	4.5	(2)	0	0	6
October	59.3	36.2	47.8	73	23	3.21	.8	5.8	.6	(1)	1	6
November	44.7	27.5	36.1	58	13	4.29	1.9	6.5	6.6	2	5	8
December	31.2	12.6	21.9	45	−9	3.30	1.5	5.0	14.2	4	19	7
Year	55.0	32.0	43.5	[3] 93	[4] −24	38.83	31.2	45.8	81.4	24	118	81

[1] Less than 0.5 day.
[2] Trace.
[3] Average annual maximum.
[4] Average annual minimum.

TABLE 11.—*Frequencies of selected temperatures and averages of heating degree-days and growing degree-days at Madison*

Month	Average number of days with—				Accumulated heat units		
	Maximum temperature of—		Minimum temperature of—		Heating degree-days [1]	Growing degree-days [2]	
	90° F. or higher	32° F. or lower	32° F. or higher	0° F. or lower	Base 65° F.	Base 40° F.	Base 50° F.
January	0	20	31	11	1,470	0	0
February	0	15	28	9	1,275	0	0
March	0	6	29	3	1,100	30	0
April	0	[3]	20	0	700	105	10
May	[3]	0	5	0	355	420	145
June	2	0	[3]	0	100	690	390
July	2	0	0	0	25	880	570
August	2	0	0	0	50	825	515
September	1	0	2	0	210	550	255
October	0	0	11	0	530	260	55
November	0	2	22	[3]	860	60	0
December	0	17	29	6	1,330	0	0
Year	7	60	177	29	8,005	3,820	1,940

[1] Heating degree-days are computed by subtracting the lower daily mean temperature from the 65° F. base temperature.

[2] Growing degree-days are computed by subtracting the base temperature from the higher daily mean temperature. A base of 40° F. is used for cool-weather crops, and that of 50° F. is used for warm-weather crops.

[3] Less than 0.5 day.

degree-days for cool-weather crops and a value of 10 growing degree-days for warm-weather crops.

A substantial number of growing degree-days in a given month, as shown in table 11, does not necessarily indicate that crops may be planted safely, because there may be still a possibility of a freeze. Table 12 shows the probability of freezing temperatures on or after specified dates in spring and on or before specified dates in fall. The data were obtained from records kept at Madison. For example, table 12 shows that there are 8 chances in 10 that a temperature of 32° will occur after May 12; by June 2 the risk is reduced to 1 in 10, or 10 percent. The chance of a freeze on May 20 is 50 to 50. A temperature of 32° generally is seriously damaging to sensitive plants, though not to hardier ones.

The average length of the freeze-free season ranges from about 110 to 120 days at the higher elevations in the northern part of the survey area to 140 days at the southern border of the survey area. Locally the season may be slightly longer or slightly shorter, especially in low frost pockets. In low boggy areas frost may be a threat very late in spring and very early in fall, and it may even occur in summer.

Precipitation.—The average annual precipitation, including the water-equivalent of snow, is about 39 inches, though it is probably a little more in the highest areas, and is somewhat less in most low areas. Precipitation is distributed fairly evenly among the seasons, though it is slightly more in fall than in other parts of the year. Precipitation, however, occurs somewhat more frequently in winter and spring than in fall. The yearly total is large enough to provide abundant water for homes and

TABLE 12.—*Probable dates of last freezing temperature in spring and first in fall*

[Based on data at Madison]

Probability	Dates for given probability at a temperature of—				
	32° F. or lower	28° F. or lower	24° F. or lower	20° F. or lower	16° F. or lower
Spring:					
1 year in 10 later than	June 2	May 20	May 6	April 22	April 11
2 years in 10 later than	May 28	May 15	May 1	April 17	April 6
5 years in 10 later than	May 20	May 7	April 23	April 9	March 29
8 years in 10 later than	May 12	April 29	April 15	April 1	March 21
Fall:					
1 year in 10 earlier than	September 10	September 23	October 6	October 17	November 3
2 years in 10 earlier than	September 15	September 28	October 11	October 22	November 8
5 years in 10 earlier than	September 23	October 6	October 19	October 30	November 16
8 years in 10 earlier than	October 1	October 14	October 27	November 7	November 24

industry and for the irrigation of crops in the short, but fairly common, dry spells in summer.

Snowfall varies considerably from year to year and from place to place in the same year. The average total snowfall ranges from 70 inches, in the southern part of the survey area, to 100 inches in the northern part. One inch or more of snow covers the ground continuously for at least 1 month every winter. On the average, at least 1 inch of snow covers the ground from about the second week of December until early in April, a period of 100 to 120 days, but it has covered the ground from the middle of November to the middle of April or later. The average maximum yearly depth of accumulated snow ranges from about 2 to 3 feet; it is even more in some wooded areas at the highest elevations. The snow is generally deepest during the third week of February, but it may remain longer in high, wooded areas. The maximum depth of accumulated snow has been only 10 to 15 inches in some years and as much as 4 feet or more in some years.

Farming

The principal farming areas in this survey area are in the eastern and central parts. Dairy farming is the main farm enterprise, but general farming and the raising of poultry and of other livestock are also important.

Because statistics on farming are available only for all of Somerset County, the statistics in this section apply to the entire county. In Somerset County the acreage of farm units has decreased since 1959, but the average size of farms has increased. Except for livestock farms and those of the general type, the number of farms also decreased between 1959 and 1964. According to the U.S. Census of Agriculture for 1964, Somerset County had 822 farms totaling about 193,366 acres, or 7.7 percent of the total acreage. The average size of farm was 235 acres. The land in farms consisted of 62,463 acres of cropland, 112,531 acres of woodland, 8,721 acres of pasture other than cropland or woodland, and 9,649 acres of other land.

Of the 822 farms in the county, 358 were unclassified, 254 were dairy farms, 109 were poultry farms, 39 were livestock farms other than dairy or poultry farms, 36 were general type farms, 13 were for other field crops, 9 were fruit and nut farms, and 4 were vegetable farms.

In 1964, 242 farms were less than 100 acres in size; 191 were between 100 and 179 acres; 91 were between 180 and 219 acres; 50 were between 220 and 259 acres; 163 were between 260 and 499 acres; 69 were between 500 and 999 acres; and 16 were 1,000 acres or more.

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Glossary

Aggregate, soil. Many fine particles held in a single mass or cluster. Natural soil aggregates such as crumbs, blocks, or prisms, are called peds. Clods are aggregates produced by tillage or logging.

Alluvium. Soil material, such as sand, silt, or clay, that has been deposited on land by streams.

Available moisture capacity (also termed available water capacity). The capacity of soils to hold water available for use by most plants. It is commonly defined as the difference between the amount of soil water at field capacity and the amount at wilting point. It is commonly expressed as inches of water per inch of soil.

Base saturation. The degree to which material that has base-exchange properties is saturated with exchangeable cations other than hydrogen, expressed as a percentage of the cation-exchange capacity.

Clay. As a soil separate, the mineral soil particles less than 0.002 millimeter in diameter. As a soil textural class, soil material that is 40 percent or more clay, less than 45 percent sand, and less than 40 percent silt.

Clay film. A thin coating of clay on the surface of a soil aggregate. Synonyms: clay coat, clay skin.

Consistence, soil. The feel of the soil and the ease with which a lump can be crushed by the fingers. Terms commonly used to describe consistence are—

Loose.—Noncoherent when dry or moist; does not hold together in a mass.

Friable.—When moist, crushes easily under gentle pressure between thumb and forefinger and can be pressed together into a lump.

Firm.—When moist, crushes under moderate pressure between thumb and forefinger, but resistance is distinctly noticeable.

Plastic.—When wet, readily deformed by moderate pressure but can be pressed into a lump; will form a "wire" when rolled between thumb and forefinger.

Sticky.—When wet, adheres to other material, and tends to stretch somewhat and pull apart, rather than to pull free from other material.

Hard.—When dry, moderately resistant to pressure; can be broken with difficulty between thumb and forefinger.

Soft.—When dry, breaks into powder or individual grains under very slight pressure.

Cemented.—Hard and brittle; little affected by moistening.

Diversion, or diversion terrace. A ridge of earth, generally a terrace, that is built to divert runoff from its natural course and, thus, to protect areas downslope from the effects of such runoff.

Erosion. The wearing away of the land surface by wind (sandblast), running water, and other geological agents.

Fertility, soil. The quality of a soil that enables it to provide compounds, in adequate amounts and in proper balance, for the growth of specified plants, when other growth factors such as light, moisture, temperature, and the physical condition of the soil are favorable.

Field moisture capacity. The moisture content of a soil, expressed as a percentage of the oven-dry weight, after the gravitational, or free, water has been allowed to drain away; the field moisture content 2 or 3 days after a soaking rain; also called *normal field capacity, normal moisture capacity,* or *capillary capacity.*

Flood plain. Nearly level land, consisting of stream sediments, that borders a stream and is subject to flooding unless protected artificially.

Fragipan. A loamy, brittle, subsurface horizon that is very low in organic matter and clay but is rich in silt or very fine sand. The layer is seemingly cemented. When dry, it is hard or very hard and has a high bulk density in comparison with the horizon or horizons above it. When moist, the fragipan tends to rupture suddenly if pressure is applied, rather than to deform slowly. The layer is generally mottled, is slowly or very slowly permeable to water, and has few or many bleached fracture planes that form polygons. Fragipans are a few inches to several feet thick; they generally occur below the B horizon, 15 to 40 inches below the surface.

Glacial drift. Rock material transported by glacial ice and then deposited; also includes the assorted and unassorted material deposited by streams flowing from glaciers.

Glacial outwash. Cross-bedded gravel, sand, and silt deposited by melting water as it flows from glacial ice.

Glacial till. Unassorted, nonstratified glacial drift consisting of clay, silt, sand, and boulders transported and deposited by glacial ice.

Gleyed soil. A soil in which waterlogging and lack of oxygen have caused the material in one or more horizons to be neutral gray in color. The term "gleyed" is applied to soil horizons with yellow and gray mottling caused by intermittent waterlogging.

Horizon, soil. A layer of soil, approximately parallel to the surface, that has distinct characteristics produced by soil-forming processes. These are the major horizons:

O horizon.—The layer of organic matter on the surface of a mineral soil. This layer consists of decaying plant residues.

A horizon.—The mineral horizon at the surface or just below an O horizon. This horizon is the one in which living organisms are most active and therefore is marked by the accumulation of humus. The horizon may have lost one or more of soluble salts, clay, and sesequioxides (iron and aluminum oxides).

B horizon.—The mineral horizon below an A horizon. The B horizon is in part a layer of change from the overlying A to the underlying C horizon. The B horizon also has distinctive characteristics caused (1) by accumulation of clay, sesquioxides, humus, or some combination of these; (2) by prismatic or blocky structure; (3) by redder or stronger colors than the A horizon; or (4) by some combination of these. Combined A and B horizons are usually called the solum, or true soil. If a soil lacks a B horizon, the A horizon alone is the solum.

C horizon.—The weathered rock material immediately beneath the solum. In most soils this material is presumed to be like that from which the overlying horizons were formed. If the material is known to be different from that in the solum, a Roman numeral precedes the letter C.

R layer.—Consolidated rock beneath the soil. The rock usually underlies a C horizon but may be immediately beneath an A or B horizon.

Humus. The well-decomposed, more or less stable part of the organic matter in mineral soils.

Kame (geology). A short ridge, hill, or mound of stratified glacial drift deposited by glacial meltwater.

Lacustrine deposits (geology). Material deposited in lake water and exposed by lowering of the water level or elevation of the land.

Mottled. Irregularly marked with spots of different colors that vary in number and size. Mottling in soils usually indicates poor aeration and lack of drainage. Descriptive terms are as follows: Abundance—*few, common,* and *many;* size—*fine, medium,* and *coarse;* and contrast—*faint, distinct,* and *prominent.* The size measurements are these: *fine,* less than 5 millimeters (about 0.2 inch) in diameter along the greatest dimension; *medium,* ranging from 5 millimeters to 15 millimeters (about 0.2 to 0.6 inch) in diameter along the greatest dimension; and *coarse,* more than 15 millimeters (about 0.6 inch) in diameter along the greatest dimension.

Munsell notation. A system for designating color by degrees of the three simple variables—hue, value, and chroma. For example, a notation of 10YR 6/4 is a color with a hue of 10YR, a value of 6, and a chroma of 4.

Natural soil drainage. Refers to the conditions of frequency and duration of periods of saturation or partial saturation that existed during the development of the soil, as opposed to altered drainage, which is commonly the result of artificial drainage or irrigation but may be caused by the sudden deepening of channels or the blocking of drainage outlets. Seven different classes of natural soil drainage are recognized.

Excessively drained soils are commonly very porous and rapidly permeable and have a low water-holding capacity.

Somewhat excessively drained soils are also very permeable and are free from mottling throughout their profile.

Well-drained soils are nearly free from mottling and are commonly of intermediate texture.

Moderately well drained soils commonly have a slowly permeable layer in or immediately beneath the solum. They have uniform color in the A and upper B horizons and have mottling in the lower B and the C horizons.

Imperfectly or somewhat poorly drained soils are wet for significant periods but not all the time, and in Podzolic soils commonly have mottlings below 6 to 16 inches, in the lower A horizon and in the B and C horizons.

Poorly drained soils are wet for long periods and are light gray and generally mottled from the surface downward, although mottling may be absent or nearly so in some soils.

Very poorly drained soils are wet nearly all the time. They have a dark-gray or black surface layer and are gray or light gray, with or without mottling, in the deeper parts of the profile.

Parent material. The disintegrated and partly weathered rock from which soil has formed.

Ped. An individual natural soil aggregate, such as a crumb, a prism, or a block, in contrast to a clod.

Permeability. The quality of a soil horizon that enables water or air to move through it. Terms used to describe permeability are as follows: *very slow, slow, moderately slow, moderate, moderately rapid, rapid,* and *very rapid.*

Reaction, soil. The degree of acidity or alkalinity of a soil, expressed in pH values. A soil that tests to pH 7.0 is precisely neutral in reaction because it is neither acid nor alkaline. An acid, or "sour," soil is one that gives an acid reaction; an alkaline soil

is one that is alkaline in reaction. In words, the degrees of acidity or alkalinity are expressed thus:

	pH		*pH*
Extremely acid	Below 4.5	Mildly alkaline	7.4 to 7.8
Very strongly acid	4.5 to 5.0	Moderately alkaline	7.9 to 8.4
Strongly acid	5.1 to 5.5	Strongly alkaline	8.5 to 9.0
Medium acid	5.6 to 6.0	Very strongly alkaline	9.1 and higher
Slightly acid	6.1 to 6.5		
Neutral	6.6 to 7.3		

Relief. The elevations or inequalities of a land surface, considered collectively.

Sand. Individual rock or mineral fragments in soils having diameters ranging from 0.05 to 2.0 millimeters. Most sand grains consist of quartz, but they may be any mineral composition. The textural class name of any soil that contains 85 percent or more sand and not more than 10 percent clay.

Silt. Individual mineral particles in a soil that range in diameter from the upper limit of clay (0.002 millimeter) to the lower limit of very fine sand (0.05 millimeter). Soil of the silt textural class is 80 percent or more silt and less than 12 percent clay.

Soil separates. Mineral particles, less than 2 millimeters in equivalent diameter and ranging between specified size limits. The names and sizes of separates recognized in the United States are as follows: *Very coarse sand* (2.0 to 1.0 millimeter); *coarse sand* (1.0 to 0.5 millimeter); *medium sand* (0.5 to 0.25 millimeter); *fine sand* (0.25 to 0.10 millimeter); *very fine sand* (0.10 to 0.05 millimeter); *silt* (0.05 to 0.002 millimeter); and *clay* (less than 0.002 millimeter). The separates recognized by the International Society of Soil Science are as follows: I (2.0 to 0.2 millimeter); II (0.2 to 0.02 millimeter); III (0.02 to 0.002 millimeter); IV (less than 0.002 millimeter).

Solum. The upper part of a soil profile, above the parent material, in which the processes of soil formation are active. The solum in mature soil includes the A and B horizons. Generally, the characteristics of the material in these horizons are unlike those of the underlying material. The living roots and other plant and animal life characteristic of the soil are largely confined to the solum.

Structure, soil. The arrangement of primary soil particles into compound particles or clusters that are separated from adjoining aggregates and have properties unlike those of an equal mass of unaggregated primary soil particles. The principal forms of soil structure are—*platy* (laminated), *prismatic* (vertical axis of aggregates longer than horizontal), *columnar* (prisms with rounded tops), *blocky* (angular or subangular), and *granular*. *Structureless* soils are (1) *single grain* (each grain by itself, as in dune sand) or (2) *massive* (the particles adhering together without any regular cleavage, as in many claypans and hardpans).

Subsoil. Technically, the B horizon; roughly, the part of the solum below plow depth.

Substratum. Technically the part of the soil below the solum.

Surface soil. The soil ordinarily moved in tillage, or its equivalent in uncultivated soil, about 5 to 8 inches in thickness. The plowed layer.

Terrace. An embankment, or ridge, constructed across sloping soils on the contour or at a slight angle to the contour. The terrace intercepts surplus runoff so that it may soak into the soil or flow slowly to a prepared outlet without harm. Terraces in fields are generally built so they can be farmed. Terraces intended mainly for drainage have a deep channel that is maintained in permanent sod.

Terrace (geological). An old alluvial plain, ordinarily flat or undulating, bordering a river, lake, or the sea. Stream terraces are frequently called second bottoms, as contrasted to flood plains, and are seldom subject to overflow. Marine terraces were deposited by the sea and are generally wide.

Texture, soil. The relative proportions of sand, silt, and clay particles in a mass of soil. The basic textural classes, in order of increasing proportion of fine particles, are *sand, loamy sand, sandy loam, loam, silt loam, silt, sandy clay loam, clay loam, silty clay loam, sandy clay, silty clay,* and *clay*. The sand, loamy sand, and sandy loam classes may be further divided by specifying "coarse," "fine," or "very fine."

Tilth, soil. The condition of the soil in relation to the growth of plants, especially soil structure. Good tilth refers to the friable state and is associated with high noncapillary porosity and stable, granular structure. A soil in poor tilth is nonfriable, hard, nonaggregated, and difficult to till.

Topsoil. A presumed fertile soil or soil material, or one that responds to fertilization, ordinarily rich in organic matter, used to topdress roadbanks, lawns, and gardens.

Water table. The highest part of the soil or underlying rock material that is wholly saturated with water. In some places an upper, or perched, water table may be separated from a lower one by a dry zone.

Weathering, soil. All physical and chemical changes produced in rocks at or near the earth's surface by atmospheric agents. These changes result in more or less complete disintegration and decomposition of the rock.

GUIDE TO MAPPING UNITS

For complete information about a mapping unit, read both the description of the mapping unit and that of the soil series to which the mapping unit belongs. Management of the soils for cropland and pasture is suggested in the soil descriptions. An explanation of the capability classification begins on page 29. For information about woodland groups and wildlife groups, read the introduction to those sections and refer to the tables in each section. Other information is given in tables as follows:

Acreage and extent, table 1, page 8.
Estimated yields, table 2, page 32.
Engineering uses of soils, tables 3, 4, and 5, pages 34 through 47.
Use of soils in town and country planning, table 8, page 54.

Map symbol	Mapping unit	Described on page	Capability subclass	Wildlife group	Woodland suitability group
			Symbol	Number	Number
AaB	Adams loamy sand, 0 to 8 percent slopes	8	IIIs	5	4s1
AaC	Adams loamy sand, 8 to 15 percent slopes	9	IVs	5	4s1
AaD	Adams loamy sand, 15 to 25 percent slopes	9	VIs	8	4s2
BaB	Bangor silt loam, 3 to 8 percent slopes	9	IIe	1	3o1
BaC2	Bangor silt loam, 8 to 15 percent slopes, eroded	10	IIIe	1	3o1
BgB	Bangor very stony silt loam, 3 to 8 percent slopes	10	VIs	7	3o1
BgC	Bangor very stony silt loam, 8 to 15 percent slopes	10	VIs	7	3o1
BgD	Bangor very stony silt loam, 15 to 25 percent slopes	10	VIs	8	3r1
BhB	Berkshire loam, 0 to 8 percent slopes	11	IIe	1	3o1
BhC	Berkshire loam, 8 to 15 percent slopes	11	IIIe	1	3o1
BkB	Berkshire very stony loam, 0 to 8 percent slopes	12	VIs	7	3o1
BkC	Berkshire very stony loam, 8 to 20 percent slopes	12	VIs	7	3o1
BkE	Berkshire very stony loam, 20 to 45 percent slopes	12	VIIs	8	3r1
Bo	Biddeford silt loam	12	VIw	4	---
BuB	Buxton silt loam, 0 to 8 percent slopes	13	IIw	2	4o1
BuC2	Buxton silt loam, 8 to 15 percent slopes, eroded	13	IIIew	1	5c1
CnC	Colton gravelly sandy loam, dark materials, 8 to 15 percent slopes	14	IIIes	5	4s1
CnD	Colton gravelly sandy loam, dark materials, 15 to 25 percent slopes	14	IVes	8	4s2
CnE	Colton gravelly sandy loam, dark materials, 25 to 45 percent slopes	14	VIIes	8	4s2
DxB	Dixmont silt loam, 0 to 8 percent slopes	14	IIw	2	3o1
DxC	Dixmont silt loam, 8 to 15 percent slopes	15	IIIew	1	3o1
DyB	Dixmont very stony silt loam, 0 to 8 percent slopes	15	VIs	12	3o1
DyC	Dixmont very stony silt loam, 8 to 20 percent slopes	16	VIs	12	3o1
Dz	Dune land	16	VIIIs	13	---
Ha	Hadley silt loam	16	I	1	3o1
Lc	Leicester very stony loam	17	VIIsw	11	4w1
Lk	Limerick silt loam	17	IIIw	9	4w1
LyB	Lyman loam, 0 to 8 percent slopes	18	IIe	6	4d1
LyC	Lyman loam, 8 to 15 percent slopes	18	IIIe	6	4d1
LzC	Lyman very rocky loam, 0 to 15 percent slopes	18	VIs	8	4x1
LzE	Lyman very rocky loam, 15 to 45 percent slopes	18	VIIs	8	4x1
MbB	Madawaska fine sandy loam, 0 to 8 percent slopes	18	IIw	2	3o1
MeB	Melrose fine sandy loam, 3 to 8 percent slopes	19	IIe	1	4o1
Mn	Mixed alluvial land	19	VIw	9	---
Mo	Monarda silt loam	20	IIIw	3	4w1
Mr	Monarda very stony silt loam	20	VIIsw	11	4w1
Pa	Peat and muck	20	VIIw	14	---
PcB	Peru loam, 0 to 8 percent slopes	20	IIw	2	3o1
PdB	Peru very stony loam, 0 to 8 percent slopes	20	VIs	12	3o1
PdC	Peru very stony loam, 8 to 15 percent slopes	21	VIs	12	3o1
PgB	Plaisted gravelly loam, 3 to 8 percent slopes	22	IIe	1	4d1
PgC	Plaisted gravelly loam, 8 to 15 percent slopes	22	IIIe	1	4d1

GUIDE TO MAPPING UNITS--Continued

Map symbol	Mapping unit	Described on page	Capability subclass	Wildlife group	Woodland suitability group
			Symbol	Number	Number
PrB	Plaisted very stony loam, 3 to 8 percent slopes	22	VIs	7	4d1
PrC	Plaisted very stony loam, 8 to 15 percent slopes	22	VIs	7	4d1
PrD	Plaisted very stony loam, 15 to 25 percent slopes	22	VIs	8	4d2
RtC	Rock land, Thorndike and Lyman materials, 0 to 15 percent slopes	23	VIIIs	13	6x1
RtE	Rock land, Thorndike and Lyman materials, 15 to 45 percent slopes	23	VIIIs	13	6x1
Sc	Scantic silt loam	23	IVw	3	5w1
Sk	Skowhegan loamy fine sand	24	IIw	2	3o1
StB	Stetson fine sandy loam, 0 to 8 percent slopes	25	IIe	1	4s1
SuC2	Suffield silt loam, 8 to 15 percent slopes, eroded	25	IIIe	10	5c1
SuD2	Suffield silt loam, 15 to 25 percent slopes, eroded	25	IVe	10	5c2
TkC	Thorndike very rock silt loam, 3 to 15 percent slopes	26	VIs	8	4x1
TkD	Thorndike very rock silt loam, 15 to 30 percent slopes	26	VIs	8	4x1
TpB	Thorndike-Plaisted loams, 0 to 8 percent slopes	27	IIe	6	4d1
TpC	Thorndike-Plaisted loams, 8 to 15 percent slopes	27	IIIe	6	4d1
TpD	Thorndike-Plaisted loams, 15 to 30 percent slopes	27	IVe	8	4d2
TtB	Thorndike-Bangor silt loams, 0 to 8 percent slopes	27	IIe	6	3o1
TtC	Thorndike-Bangor silt loams, 8 to 15 percent slopes	27	IIIe	6	3o1
TtD	Thorndike-Bangor silt loams, 15 to 30 percent slopes	27	IVe	8	3r1
Wa	Walpole fine sandy loam	28	IIIw	3	4w1
Wn	Winooski silt loam	28	IIw	2	3o1

SOIL ASSOCIATIONS *

1 Adams-Walpole-Buxton association: Deep, excessively drained, poorly drained, and moderately well drained, nearly level to moderately steep loamy sands and fine sandy loams that formed in glacial outwash and silt loams that formed in marine or lacustrine sediments, or both

2 Monarda-Dixmont-Bangor association: Deep, poorly drained to well-drained, nearly level to moderately steep silt loams that formed in glacial till; on uplands

3 Berkshire-Peru-Leicester association: Deep, well-drained to poorly drained, nearly level to steep loams that formed in glacial till; on uplands

4 Plaisted-Monarda-Thorndike association: Well-drained and poorly drained, nearly level to moderately steep, deep gravelly loams and silt loams that have a fragipan and shallow silt loams; on uplands

5 Scantic-Peat and Muck-Biddeford association: Deep, poorly drained and very poorly drained, nearly level silt loams that formed in marine or lacustrine sediments, or both, and in organic deposits

* If texture is given, it is the texture of the surface layer of the major soils in the association.

Published 1972

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U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

UNIVERSITY OF MAINE AGRICULTURAL EXPERIMENT STATION

GENERAL SOIL MAP

SOMERSET COUNTY, MAINE, SOUTHERN PART

Scale 1:253 440

1 0 1 2 3 4 Miles

This map is for general planning. It shows only the major soils and does not contain sufficient detail for operational planning.

INDEX TO MAP SHEETS

SOMERSET COUNTY, MAINE, SOUTHERN PART

Scale 1:253 440

1 0 1 2 3 4 Miles

N

Inset, sheet 1
Inset, sheet 3
Inset, sheet 7
Inset, sheet 17
Inset, sheet 9
Inset, sheet 68
Inset, sheet 68
Inset, sheet 73
Inset, sheet 69

69°40′
69°50′
69°30′
69°20′
70°00′
45°00′
44°50′
44°40′

SURVEY LIMIT OF DETAILED SOIL

FRANKLIN COUNTY
KENNEBEC COUNTY
PENOBSCOT COUNTY
WALDO COUNTY

1 BRIGHTON
2
3
4 Bingham
5 BINGHAM
6 Brighton
7
8 CAMBRIDGE
9 LEXINGTON
10
11
12
13
14 HARMONY
15
16 Ripley
17
18
19
20
21 SOLON
22 West Athens
23 ATHENS
24 Mainstream
25
26 ST ALBANS
27 NEW PORTLAND
28 East New Portland
29 EMBDEN
30
31
32
33
34 St Albans
35
36 New Portland
37
38 North Anson
39 WESSERUNSETT LAKE
40
41 CORNVILLE
42 HARTLAND
43 Hartland
44 PALMYRA
45
46 ANSON
47 Lakewood
48 Cornville
49
50
51
52 Palmyra
53
54 Anson
55 Madison
56 MADISON
57 SKOWHEGAN
58 Canaan
59 PITTSFIELD
60 Pittsfield
61 STARKS
62 Starks
63 NORRIDGEWOCK
64
65 Norridgewock
66 CANAAN
67
68 DETROIT
69
70 Mercer
71 MERCER
72
73 Hinckley
74
75 SMITHFIELD
76 Smithfield
77 FAIRFIELD
78 Shawmut
79 Fairfield Center
80 Fairfield

Smith Pond
Wyman Pond
Jackson Pond
Spruce Pond
Alder Stream
Sandy Stream
Withum Stream
Mill Str
Johnson Brook
Indian Pond
Hancock Pond
Gilman Pond
Hancock Str
Gilman Str
Mill Brook
Fahi Pond
Carratunk Str
Big River
Fall Brook
Wentworth Pond
Michael Str
Longley Brook
Corson Brook
Tucker Brook
Higgins Brook
Ferguson Brook
Mainstream Pond
Goodwin Brook
Brown Brook
Weymouth Pond
Indian Pond
Barker Pond
Weesserunsett Str
Bog Pond
Black Brook
Starbird Pond
Stratton Pond
Indian Str
Smith Brook
Mailhigan Brook
Whitten Pond
Morrill Pond
Douglas Pond
Sibley Pond
Lake George
Oaks Pond
Carrabassett Str
Farnham Brook
Craigin Brook
Martin Brook
Stetson Brook
Fish Brook
North Pond
East Pond
Maine Central R
Kennebec River

SOIL LEGEND

The first capital letter is the initial one of the soil name. A second capital letter, B, C, D, or E, shows the slope. Most symbols without a slope letter are those of nearly level soils or land types, but the land type, Dune land, has a considerable range of slope. A final number, 2, in the symbol, shows that the soil is eroded.

SYMBOL	NAME
AaB	Adams loamy sand, 0 to 8 percent slopes
AaC	Adams loamy sand, 8 to 15 percent slopes
AaD	Adams loamy sand, 15 to 25 percent slopes
BaB	Bangor silt loam, 3 to 8 percent slopes
BaC2	Bangor silt loam, 8 to 15 percent slopes, eroded
BbB	Bangor very stony silt loam, 3 to 8 percent slopes
BbC	Bangor very stony silt loam, 8 to 15 percent slopes
BbD	Bangor very stony silt loam, 15 to 25 percent slopes
BhB	Berkshire loam, 0 to 8 percent slopes
BhC	Berkshire loam, 8 to 15 percent slopes
BkB	Berkshire very stony loam, 0 to 8 percent slopes
BkC	Berkshire very stony loam, 8 to 20 percent slopes
BkE	Berkshire very stony loam, 20 to 45 percent slopes
Bo	Biddeford silt loam
BuB	Buxton silt loam, 0 to 8 percent slopes
BuC2	Buxton silt loam, 8 to 15 percent slopes, eroded
CnC	Colton gravelly sandy loam, dark materials, 8 to 15 percent slopes
CnD	Colton gravelly sandy loam, dark materials, 15 to 25 percent slopes
CnE	Colton gravelly sandy loam, dark materials, 25 to 45 percent slopes
DxB	Dixmont silt loam, 0 to 8 percent slopes
DxC	Dixmont silt loam, 8 to 15 percent slopes
DyB	Dixmont very stony silt loam, 0 to 8 percent slopes
DyC	Dixmont very stony silt loam, 8 to 20 percent slopes
Dz	Dune land
Ha	Hadley silt loam
Lc	Leicester very stony loam
Lk	Limerick silt loam
LyB	Lyman loam, 0 to 8 percent slopes
LyC	Lyman loam, 8 to 15 percent slopes
LzC	Lyman very rocky loam, 0 to 15 percent slopes
LzE	Lyman very rocky loam, 15 to 45 percent slopes
MbB	Madawaska fine sandy loam, 0 to 8 percent slopes
MeB	Melrose fine sandy loam, 3 to 8 percent slopes
Mn	Mixed alluvial land
Mo	Monarda silt loam
Mr	Monarda very stony silt loam
Pa	Peat and muck
PcB	Peru loam, 0 to 8 percent slopes
PdB	Peru very stony loam, 0 to 8 percent slopes
PdC	Peru very stony loam, 8 to 15 percent slopes
PgB	Plaisted gravelly loam, 3 to 8 percent slopes
PgC	Plaisted gravelly loam, 8 to 15 percent slopes
PrB	Plaisted very stony loam, 3 to 8 percent slopes
PrC	Plaisted very stony loam, 8 to 15 percent slopes
PrD	Plaisted very stony loam, 15 to 25 percent slopes
RtC	Rock land, Thorndike and Lyman materials, 0 to 15 percent slopes
RtE	Rock land, Thorndike and Lyman materials, 15 to 45 percent slopes
Sc	Scantic silt loam
Sk	Skowhegan loamy fine sand
StB	Stetson fine sandy loam, 0 to 8 percent slopes
SuC2	Suffield silt loam, 8 to 15 percent slopes, eroded
SuD2	Suffield silt loam, 15 to 25 percent slopes, eroded
TkC	Thorndike very rocky silt loam, 3 to 15 percent slopes
TkD	Thorndike very rocky silt loam, 15 to 30 percent slopes
TpB	Thorndike-Plaisted loams, 0 to 8 percent slopes
TpC	Thorndike-Plaisted loams, 8 to 15 percent slopes
TpD	Thorndike-Plaisted loams, 15 to 30 percent slopes
TtB	Thorndike-Bangor silt loams, 0 to 8 percent slopes
TtC	Thorndike-Bangor silt loams, 8 to 15 percent slopes
TtD	Thorndike-Bangor silt loams, 15 to 30 percent slopes
Wa	Walpole fine sandy loam
Wn	Winooski silt loam

CONVENTIONAL SIGNS

WORKS AND STRUCTURES

Highways and roads
- Dual
- Good motor
- Poor motor
- Trail

Highway markers
- National Interstate
- U. S.
- State or county

Railroads
- Single track
- Multiple track
- Abandoned

Bridges and crossings
- Road
- Trail
- Railroad
- Ferry (FY)
- Ford (FORD)
- Grade
- R. R. over
- R. R. under

Tunnel

Buildings
- School
- Church

Mine and quarry

Gravel pit

Power line

Pipeline

Cemetery

Dams

Levee

Tanks

Well, oil or gas

Forest fire or lookout station

Windmill

BOUNDARIES

- National or state
- County
- Minor civil division
- Reservation
- Land grant
- Small park, cemetery, airport

DRAINAGE

Streams, double-line
- Perennial
- Intermittent

Streams, single-line
- Perennial
- Intermittent
  - Crossable with tillage implements
  - Not crossable with tillage implements
- Unclassified

Canals and ditches (CANAL)

Lakes and ponds
- Perennial (water, w)
- Intermittent (int)

Spring

Marsh or swamp

Wet spot

Alluvial fan

Drainage end

RELIEF

Escarpments
- Bedrock
- Other

Prominent peak

Depressions

	Large	Small
Crossable with tillage implements		
Not crossable with tillage implements		
Contains water most of the time		

SOIL SURVEY DATA

- Soil boundary and symbol (Dx)
- Gravel
- Stoniness
  - Stony
  - Very stony
- Rock outcrops
- Chert fragments
- Clay spot
- Sand spot
- Gumbo or scabby spot
- Made land
- Severely eroded spot
- Blowout, wind erosion
- Gully

SOMERSET COUNTY, MAINE, SOUTHERN PART — SHEET NUMBER 1

SOMERSET COUNTY, MAINE, SOUTHERN PART NO. 1

This map is one of a set compiled in 1971 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the University of Maine Agricultural Experiment Station.
Photobase from 1965 aerial photographs. Grid values based on Maine plane coordinate system, west zone. 1927 North American datum.

605 000 FEET
630 000 FEET
635 000 FEET
825 000 FEET
830 000 FEET
820 000 FEET

LIMIT OF SOIL SURVEY

DETAILED SOIL SURVEY

B R I G H T O N

PISCATAQUIS COUNTY

Wellington Bog

Potter Bog

Decker Bog

Bryant Bog

Mayfield Pond

Palin Pond

Foss Mountain

(Joins sheet 7)

(Joins sheet 6)

(Joins inset, sheet 3)

(Joins inset)

N

1 Mile
5 000 Feet

Scale 1:20 000

SOMERSET COUNTY, MAINE, SOUTHERN PART — SHEET NUMBER 2

525 000 FEET

815 000 FEET

N

1 Mile

5 000 Feet

Scale 1:20 000

0 ¼ ½ ¾ 1

1 000 2 000 3 000 4 000 5 000

LIMIT OF DETAILED SOIL SURVEY

L E X I N G T O N

T 2 R 1 B K P W K R

FRANKLIN COUNTY

Clay Brook Mtn

Howard Hill

Michael Stream

Moores Pond

BkE BkC BkB PdB PdC LzE LzC LyC Lc StB Sk Wa CnC CnD CnE MbB Pa AaB

(Joins sheet 3)

(Joins sheet 9)

800 000 FEET

505 000 FEET

SOMERSET COUNTY, MAINE, SOUTHERN PART NO. 2

Photobase from 1965 aerial photographs. Grid values based on Maine plane coordinate system, west zone. 1927 North American datum.

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SOMERSET COUNTY, MAINE, SOUTHERN PART — SHEET NUMBER 3

3

N

530 000 FEET

585 000 FEET

820 000 FEET

815 000 FEET

818 000 FEET

600 000 FEET

550 000 FEET

805 000 FEET

2 000 AND 5 000-FOOT GRID TICKS

SOIL SURVEY OF DETAILED LIMIT

B I N G H A M

BRIGHTON

JOHNSON MOUNTAIN

L E X I N G T O N

T 2 R 1 B K P W K R

C O N C O R D

Peaked Hill

Houston Brook

Little Houston Brook

SANDY STREAM

(Joins sheet 1)

(Joins sheet 2)

(Joins sheet 4)

(Joins sheet 5)

(Joins sheet 10)

1 Mile 5 000 Feet

Scale 1:20 000

1 ¼ 2 000 1 000 0 0

½ 3 000

¾ 4 000

1 5 000

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SOMERSET COUNTY, MAINE, SOUTHERN PART NO. 3

SOMERSET COUNTY, MAINE, SOUTHERN PART — SHEET NUMBER 4

4

N

575 000 FEET

815 000 FEET

805 000 FEET

555 000 FEET

(Joins sheet 3)

(Joins sheet 5)

(Joins sheet 11)

Scale 1:20 000

1 Mile

5 000 Feet

0 0

¼ 1 000

½ 2 000

¾ 4 000

1 5 000

SOMERSET COUNTY, MAINE, SOUTHERN PART NO. 4

Photobase from 1965 aerial photographs. Grid values based on Maine plane coordinate system, west zone. 1927 North American datum.

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SOMERSET COUNTY, MAINE, SOUTHERN PART — SHEET NUMBER 5

5

N

580 000 FEET

815 000 FEET

(Joins inset, sheet 3)

(Joins sheet 4)

(Joins sheet 6)

(Joins sheet 12)

805 000 FEET

600 000 FEET

LIMIT OF DETAILED SOIL SURVEY

Brook

Jackson

Morse Pond

Mahoney Hill

Johnson Brook

Johnson Corner

Fall Brook

BINGHAM

JOHNSON

MOUNTAIN

TRAIL

Mo

Ps

Wn

Scale 1:20 000

1 Mile

5 000 Feet

1 000 0 1 000

¼ 0 ¼

2 000 1 2 000

½ 0 ½

3 000 2 000 1 000 0 1 000 2 000 3 000

¾ 0 ¾

4 000 2 000 0 2 000 4 000

1 0 1

5 000 2 500 0 2 500 5 000

SOMERSET COUNTY, MAINE, SOUTHERN PART NO. 5

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Photobase from 1965 aerial photographs. Grid values based on Ma plane coordinate system, west zone. 1927 North American datum.

6

SOMERSET COUNTY, MAINE, SOUTHERN PART — SHEET NUMBER 6

N

(Joins sheet 1)

625 000 FEET

815 000 FEET

805 000 FEET

605 000 FEET

(Joins sheet 5)

(Joins sheet 7)

(Joins sheet 13)

1 Mile

5 000 Feet

Scale 1:20 000

0 0

¼ 1 000

½ 2 000

¾ 4 000

1 5 000

Smith Pond

East Branch Wesserunsett Stream

Trout Pond

Foss Mountain

Kelly Mountain

Brighton

BINGHAM

BRIGHTON

DyB DyC PrC PrD PgB PgC PrB TkD TkC Mr Pa StB CnC Sk DxB TpC TpB

SOMERSET COUNTY, MAINE, SOUTHERN PART NO. 6

Photobase from 1965 aerial photographs. Grid values based on Maine plane coordinate system, west zone. 1927 North American datum.

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Photobase from 1965 aerial photographs. Grid values based on Maine plane coordinate system, west zone. 1927 North American datum.

SOMERSET COUNTY, MAINE, SOUTHERN PART NO. 7

630 000 FEET

815 000 FEET

(Joins inset, sheet 1)

(Joins sheet 6)

(Joins sheet 14)

670 000 FEET

810 000 FEET

805 000 FEET

675 000 FEET

650 000 FEET

(Joins sheet 8)

(Joins sheet 15)

Docker Bog

Potter Bog

Scribner Bog

Brook

Ham Hill

PISCATAQUIS COUNTY

Ferguson Brook

B R I G H T O N

C A M B R I D G E

Mr DyB DyC DxB DxC TkC TkD TpB TpC PrC PrB PgB PgC BaB BaC2 BgB BgC BtB TtB TtC RtC Mo Pa

7

N

1 Mile

5 000 Feet

Scale 1:20 000

SOMERSET COUNTY, MAINE, SOUTHERN PART — SHEET NUMBER 8

8

N

700 000 FEET

815 000 FEET

805 000 FEET

680 000 FEET

1 Mile

5 000 Feet

Scale 1:20 000

1 0 1 000 2 000 3 000 4 000 5 000

(Joins inset, sheet 7)

(Joins sheet 16)

(Joins inset, sheet 17)

PISCATAQUIS COUNTY

CAMBRIDGE

SEBASTICOOK RIPLEY

Jimmy Brook

Packard Brook

Austin Brook

Spaulding Brook

SEBASTICOOK RIVER

GRAVEL PIT

150

201

SOMERSET COUNTY, MAINE, SOUTHERN PART NO. 8

Photobase from 1965 aerial photographs. Grid values based on Maine plane coordinate system, west zone. 1927 North American datum.

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SOMERSET COUNTY, MAINE, SOUTHERN PART — SHEET NUMBER 9

505 000 FEET

800 000 FEET

(Joins sheet 2)

9

N

Sk

MbB

Wa

CnD

StB

MbB

Sk

MbB

Wa

Lk

MbB

CnC

StB

ChE

CnC

Wa

AaD

AaB

AaC

Wa

AaB

AaC

Sk

AaB

AaC

Wa

AaB

AaC

Sk

AaB

AaC

Wa

AaB

AaC

Sk

10

SOMERSET COUNTY, MAINE, SOUTHERN PART — SHEET NUMBER 10

N

1 Mile
5 000 Feet
Scale 1:20 000
0 ¼ ½ ¾ 1

(Joins sheet 3)
(Joins sheet 9)
(Joins sheet 11)
(Joins sheet 19)

550 000 FEET
800 000 FEET
785 000 FEET
530 000 FEET

FLETCHER MOUNTAIN

SALEM
SANDY
LEXINGTON
CONCORD
T 2 R 1 B K P W K R

Spruce Pond
Little Houston Brook
Sandy Brook
Pease Brook
Hutchins Hill
Chandler Hill
Hackett Hill
Hunnewell Brk
Wilham Brook

Wa MbB StB CnD AaB AaD AaC BkC BkE BhB BhC BkB PdB PdC LzE Lc Sk Wn Ha Mn Lk LyC PcB Pa

SOMERSET COUNTY, MAINE, SOUTHERN PART NO. 10

Photobase from 1965 aerial photographs. Grid values based on Maine plane coordinate system, west zone, 1927 North American datum.

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SOMERSET COUNTY, MAINE, SOUTHERN PART — SHEET NUMBER 11

11

N

555 000 FEET

800 000 FEET

(Joins sheet 4)

(Joins sheet 10)

(Joins sheet 12)

(Joins sheet 20)

575 000 FEET

785 000 FEET

FLETCHER MOUNTAIN

OLD BLUFF MOUNTAIN

CONCORD

BINGHAM

Jackson Pond

Lily Pond

Lily Pond

Tibbetts Pond

Martin Stream

Mill Stream

Severance Stream

KENNEBEC RIVER

CENTRAL MAINE

Savage Hill

TRAIL

BkC BkE BkB BhC BhB PdC PdB LzE LzC Lc LyC LyB Pa Wa Wn Ha Lk StB MbB CnC CnD CnE AaD AaB AaC PrD Sk TpB TpC DyC Mr

1 Mile

5 000 Feet

Scale 1:20 000

1 0 1 000 2 000 3 000 4 000 5 000

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Photobase from 1965 aerial photographs. Grid values based on Maine plane coordinate system, west zone. 1927 North American datum.

12

SOMERSET COUNTY, MAINE, SOUTHERN PART — SHEET NUMBER 12

(Joins sheet 5)

N

600 000 FEET

800 000 FEET

1 Mile

5 000 Feet

Scale 1:20 000

(Joins sheet 11)

(Joins sheet 13)

785 000 FEET

580 000 FEET

(Joins sheet 21)

BINGHAM

SOLON

Johnson Mtn

Mt Abe

Pull

Lk Brook

Brook

Baker Pond

TRAIL

201

Mo

Pa

Ha

Lk

Wn

Mn

Wa

Mr

AaB AaC AbB AbC CnC CnD CnE DxB DxC DyB DyC MbB PgB PgC PrB PrC PrD RtC StB TkC TpB TpC TpD TtC

SOMERSET COUNTY, MAINE, SOUTHERN PART NO. 12

Photobase from 1965 aerial photographs. Grid values based on Maine plane coordinate system, west zone. 1927 North American datum.

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SOMERSET COUNTY, MAINE, SOUTHERN PART — SHEET NUMBER 13

13

N

605 000 FEET

800 000 FEET

(Joins sheet 6)

(Joins sheet 12)

(Joins sheet 14)

785 000 FEET

625 000 FEET

(Joins sheet 22)

Wyman Pond

Prentiss Pond

Moody Corner

Mulhern Hill

Bunker Hill

Wentworth Pond

Meadow Brook

Branch Brook

Westcustogo Stream

Upper Stream

Coosem

SOMERSET COUNTY, MAINE, SOUTHERN PART NO. 13

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Photobase from 1965 aerial photographs. Grid values based on Maine plane coordinate system, west zone. 1927 North American datum.

1 Mile
5 000 Feet
0
Scale 1:20 000
1 000
¼
2 000
½
3 000
¾
4 000
1
5 000

SOMERSET COUNTY, MAINE, SOUTHERN PART — SHEET NUMBER 14

14

N

1 Mile
5 000 Feet

Scale 1:20 000

0 ¼ ½ ¾ 1

0 1 000 2 000 3 000 4 000 5 000

650 000 FEET

800 000 FEET

785 000 FEET

630 000 FEET

(Joins sheet 7)
(Joins sheet 13)
(Joins sheet 15)
(Joins sheet 23)

B R I G H T O N

A T H E N S

S O M E R S E T C O U N T Y, M A I N E, S O U T H E R N P A R T N O. 14

Photobase from 1965 aerial photographs. Grid values based on Maine plane coordinate system, west zone. 1927 North American datum.

This map is one of a set compiled in 1971 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the University of Maine Agricultural Experiment Station.

SOMERSET COUNTY, MAINE, SOUTHERN PART — SHEET NUMBER 15

655 000 FEET

800 000 FEET

(Joins sheet 14)

(Joins inset, sheet 7)

(Joins sheet 16)

675 000 FEET

785 000 FEET

(Joins sheet 24)

PISCATAQUIS COUNTY

SOMERSET COUNTY

CAMBRIDGE

HARMONY

RIPLEY

Cambridge

Sugar Hill

Pond

Cambridge Brook

Ferguson Brook

Little Ferguson Brook

Mud Pond

Rattlebridge Brook

Sebasticook Pond

Sebasticook River

Mainstream

Higgins Brook

Tucker Brook

Kimball Brook

Brook

BaB BaC2 BgB BgC BgD CnB CnC CnD DxB DxC DyB DyC Mo Mr Pa PgB PgC PrB PrC PrD StB SuC2 TkC TkD TpB TpC TtB TtC TtD Wa

1 Mile

5 000 Feet

Scale 1:20 000

This map is one of a set compiled in 1971 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the University of Maine Agricultural Experiment Station.
Photobase from 1965 aerial photographs. Grid values based on Maine plane coordinate system, west zone. 1927 North American datum.

SOMERSET COUNTY, MAINE, SOUTHERN PART NO. 15

N

700 000 FEET

800 000 FEET

(Joins sheet 8)

(Joins sheet 15)

(Joins sheet 17)

(Joins sheet 25)

785 000 FEET

680 000 FEET

1 Mile

5 000 Feet

Scale 1:20 000

0 0 ¼ 1 000 ½ 2 000 ¾ 3 000 1 4 000 5 000

MT PLEASANT CEMETERY

Cambridge Flats School

CAMBRIDGE

RIPLEY

West Ripley

RIVER

Ripley Pond

SEBASTICOOK

Ferguson Brook

Jimmy Stream

Dickey Brook

Pudge Brook

McIntire Brook

Addition Brook

TRAIL

Bk

SOMERSET COUNTY, MAINE, SOUTHERN PART NO. 16

Photobase from 1965 aerial photographs. Grid values based on Maine plane coordinate system, west zone. 1927 North American datum.

This map is one of a set compiled in 1971 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the University of Maine Agricultural Experiment Station.

SOMERSET COUNTY, MAINE, SOUTHERN PART — SHEET NUMBER 17

17

N

This map is one of a set compiled in 1971 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the University of Maine Agricultural Experiment Station.
Photobase from 1965 aerial photographs. Grid values based on Maine coordinate system, west zone. 1927 North American datum.

SOMERSET COUNTY, MAINE, SOUTHERN PART NO. 17

705 000 FEET

800 000 FEET

(Joins lower right)

(Joins sheet 16)

(Joins sheet 26)

715 000 FEET

785 000 FEET

(Joins sheet 8)

815 000 FEET

805 000 FEET

(Joins upper left)

710 000 FEET

PISCATAQUIS COUNTY

PENOBSCOT COUNTY

CAMBRIDGE

RIPLEY

STETSON

Pond

Ripley

Sebasticook River

Robinson Brook

Halfmoon Pond

Chandler Hill

FERNDALE CEMETERY

Addition

Mr Brook

Mr

Mo

DyB

DxB

TtB

TkC

BaB

BgB

BgC

BaC2

DyC

TkD

TtC

DxC

BeB

BgD

CnC

StB

Bo

Mn

Pa

1 Mile

5000 Feet

Scale 1:20 000

1 000

2 000

3 000

4 000

5 000

N

1 Mile 5 000 Feet

Scale 1:20 000

0 0

¼ 1 000

½ 2 000

¾ 3 000

1 4 000

5 000

504 500 FEET

755 000 FEET

752 000 FEET

503 500 FEET

(Joins sheet 27)

525 000 FEET

780 000 FEET

(Joins sheet 9)

(Joins sheet 19)

770 000 FEET

505 000 FEET

(Joins inset, sheet 9)

(Joins sheet 27)

L E X I N G T O N

T 2 R 1 B K P W K R

N E W P O R T L A N D

FRANKLIN COUNTY

SOMERSET COUNTY

Indian Pond

Little Indian Pond

Stream

Indian

Gilman Pond

Mountain

Brackett Hill

Clark

Pennell Pond

Sucker Brook

Alder Brook

LEXINGTON FLATS

SAVOY STREAM

GILMAN POND

CARRABASSETT RIVER

Second Mtn

Brook

Brook

Brook

Brook

BkC PdB Lc BkB PdC BkE LyC Pa Wn Mn Lk Sk Wa AaB AaC BuB Sc CnC StB SuC2 SuD2 BhB BhC LzE LzF RtE

SOMERSET COUNTY, MAINE, SOUTHERN PART NO. 18

Photobase from 1965 aerial photographs. Grid values based on Maine plane coordinate system, west zone. 1927 North American datum.

This map is one of a set compiled in 1971 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the University of Maine Agricultural Experiment Station.

This map is one of a set compiled in 1971 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the University of Maine Agricultural Experiment Station.
Photobase from 1965 aerial photographs. Grid values based on Maine plane coordinate system, west zone. 1927 North American datum.

SOMERSET COUNTY, MAINE, SOUTHERN PART NO. 19

530 000 FEET

780 000 FEET

770 000 FEET

550 000 FEET

(Joins sheet 18)
(Joins sheet 10)
(Joins sheet 20)
(Joins sheet 28)

L E X I N G T O N

T 2 R 1 B K P W K R

N E W P O R T L A N D

C O N C O R D

E M B D E N

Hackett Hill

Goodrich Hill

Berry Hill

Hancock Pond

Pond

Gilman Pond

Flats Stream

Sandy Stream

Gilman Stream

Wilham Brook

Hummocwell Brook

Hancock Stream

Mill Brook

AaB AaC BhB BhC BkB BkC BkE BuB CnC CnD CnE LyB LyC LzC MbB PcB PdB PdC Pa Sc StB Wa

Lc Mn Sk Wn

N

1 Mile

5 000 Feet

Scale 1:20 000

1 0 1 2 3 4 5 000

SOMERSET COUNTY, MAINE, SOUTHERN PART — SHEET NUMBER 20

20

N

(Joins sheet 11)

575 000 FEET

780 000 FEET

770 000 FEET

555 000 FEET

(Joins sheet 19)

(Joins sheet 21)

(Joins sheet 29)

1 Mile

5 000 Feet

Scale 1:20 000

0

1/4 1/2 3/4 1

1 000 2 000 3 000 4 000 5 000

EMBDEN POND

JACKMAN

MOSCOW

EMBDEN

BINGHAM

SOLON

Mill Stream

Martin Stream

Carratunk Falls

Arnolds Landing

Dunbar Hill

KENNEBEC RIVER

GRAVEL PIT

CENTRAL MAINE TRAIL

Solon

201

16

8

20

SOMERSET COUNTY, MAINE, SOUTHERN PART NO. 20

Photobase from 1965 aerial photographs. Grid values based on Maine plane coordinate system, west zone. 1927 North American datum.

This map is one of a set compiled in 1971 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the University of Maine Agricultural Experiment Station.

SOMERSET COUNTY, MAINE, SOUTHERN PART — SHEET NUMBER 21

21

N

580 000 FEET

780 000 FEET

770 000 FEET

600 000 FEET

(Joins sheet 12)

(Joins sheet 20)

(Joins sheet 22)

(Joins sheet 30)

B I N G H A M

S O L O N

Solon

Whipple Hill

French Hill

Eaton Hill

Parkman Hill

Rowell Mountain

Baker Pond

Chase Pond

Brook

Fall Stream

Michael Stream

TRAIL

201

1 Mile

5 000 Feet

Scale 1:20 000

This map is one of a set compiled in 1971 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the University of Maine Agricultural Experiment Station.
Photobase from 1965 aerial photographs. Grid values based on Maine plane coordinate system, west zone. 1927 North American datum.

SOMERSET COUNTY, MAINE, SOUTHERN PART NO. 21

N

(Joins sheet 13)

625 000 FEET

780 000 FEET

(Joins sheet 23)

1 Mile

5 000 Feet

Scale 1:20 000

0 0

1/4 1 000

1/2 2 000

3/4 4 000

1 5 000

770 000 FEET

605 000 FEET

(Joins sheet 21)

(Joins sheet 31)

Wentworth Pond

Chase Pond

Mud Pond

Rowell Pond

Lilu Pond

West Athens

Corsons Corner

SOLON

CHASE TRAIL

GRAVEL PIT

Dyer Brook

Long Brook

Brook

Brook

Brook

Brook

Stream

Chapman Ridge

151

Mr Mo PrC PrB PgB PgC DyB DyC DxB DxC TpB TpC TpD TkC TkD TtB TtC PrD Pa Wa StB StC CnB CnC BaB BaC AaB MbB NbB

SOMERSET COUNTY, MAINE, SOUTHERN PART NO. 22

Photobase from 1965 aerial photographs. Grid values based on Maine plane coordinate system, west zone. 1927 North American datum.

This map is one of a set compiled in 1971 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the University of Maine Agricultural Experiment Station.

SOMERSET COUNTY, MAINE, SOUTHERN PART — SHEET NUMBER 23

23

N

630 000 FEET

780 000 FEET

770 000 FEET

650 000 FEET

(Joins sheet 14)

(Joins sheet 22)

(Joins sheet 24)

(Joins sheet 32)

ATHENS

HARMONY

Stickney Hill

Peeks Hill

Carson Hill

Lords Hill

Fox Hill

Perry Pond

Stream

Branch Mo

Kimball Brook

Lemon Stream

East

Wesserunsett

GRAVEL PIT

TRAIL

150

1 Mile

5000 Feet

Scale 1:20 000

0 ¼ ½ ¾ 1

0 1 000 2 000 3 000 4 000 5 000

This map is one of a set compiled in 1971 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the University of Maine Agricultural Experiment Station.
Photobase from 1965 aerial photographs. Grid values based on Maine plane coordinate system, west zone. 1927 North American datum.

SOMERSET COUNTY, MAINE, SOUTHERN PART NO. 23

N

(Joins sheet 15)

675 000 FEET

780 000 FEET

770 000 FEET

655 000 FEET

(Joins sheet 33)

(Joins sheet 23)

(Joins sheet 25)

1 Mile

5 000 Feet

Scale 1:20 000

0 1 000 2 000 3 000 4 000 5 000

¼ ½ ¾ 1

Harmony

Hurd Hill

Mainstream Station

Mainstream

Mainstream Mountain

Devils Head

Castle Harmony

Cyrs

Little Ferguson Brook

Church Brook

Mainstream Pond

Lost Homes

Bk

Sp

Wm

Pipe

Lk

Sc

Wn

Bo

Mn

Sk

Wa

Ha

Mo

Pa

Mr

Mine

Pit

Sand

Gravel

Quarry

Dump

Tank

Spring

Well

Cemetery

Church

School

Power Line

Pipe Line

Road Classification

Primary Highway

Secondary Highway

Light-duty Road

Unimproved Road

Trail

Railroad

Interstate Route

U.S. Route

State Route

Bridge

Ford

Gate

Boundary

State

County

Township

Range Line

Section Line

Land Grant

Index to Adjoining Sheets

Scale 1:20 000

1 Mile

5 000 Feet

0 1 000 2 000 3 000 4 000 5 000

¼ ½ ¾ 1

SOMERSET COUNTY, MAINE, SOUTHERN PART NO. 24

Photobase from 1965 aerial photographs. Grid values based on Maine plane coordinate system, west zone. 1927 North American datum.

This map is one of a set compiled in 1971 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the University of Maine Agricultural Experiment Station.

SOMERSET COUNTY, MAINE, SOUTHERN PART — SHEET NUMBER 25

25

N

680 000 FEET

780 000 FEET

770 000 FEET

700 000 FEET

(Joins sheet 16)

(Joins sheet 24)

(Joins sheet 26)

(Joins sheet 34)

RIPLEY

STALBANY

St Albans Mountain

Goodwin

Great Moose Lake

Big Indian Camp

INDIAN POND

Brook

Nichols Brook

TRAIL

MAINE CENTRAL

GRAVEL PIT

Scale 1:20 000

1 Mile

5 000 Feet

This map is one of a set compiled in 1971 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the University of Maine Agricultural Experiment Station.
Photobase from 1965 aerial photographs. Grid values based on Maine, plane coordinate system, west zone, 1927 North American datum.

SOMERSET COUNTY, MAINE, SOUTHERN PART NO. 25

SOMERSET COUNTY, MAINE, SOUTHERN PART — SHEET NUMBER 26

26

N

1 Mile

5 000 Feet

Scale 1:20 000

0 1/4 1/2 3/4 1

0 1 000 2 000 3 000 4 000 5 000

725 000 FEET

780 000 FEET

770 000 FEET

705 000 FEET

(Joins sheet 17)

(Joins sheet 25)

(Joins sheet 35)

RIPLEY

SOMERSET COUNTY

PENOBSCOT COUNTY

Halfmoon Pond

Little Indian Pond

Big Indian Camp

INDIAN POND

Ripley Stream

Bog Brook

Weymouth Pond

Harrison Stream

White Bk

Dixie Corner

TRAIL

SOUTHERN PART NO. 26

Photobase from 1965 aerial photographs. Grid values based on Maine plane coordinate system, west zone. 1927 North American datum.

This map is one of a set compiled in 1971 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the University of Maine Agricultural Experiment Station.

SOMERSET COUNTY, MAINE, SOUTHERN PART — SHEET NUMBER 27

27

N

505 000 FEET

765 000 FEET

(Joins inset, sheet 9)

(Joins sheet 18)

(Joins inset, sheet 18)

(Joins sheet 28)

525 000 FEET

(Joins sheet 36)

NEW PORTLAND

Millay Hill

Pennell Pond

Bloodsucker Brook

Taylor Brook

CARRABASSETT RIVER

Dyer Brook

Nequil Brook

Clark Brook

TRAIL

GRAVEL PIT

FRANKLIN COUNTY

1 Mile

5 000 Feet

Scale 1:20 000

0 ¼ ½ ¾ 1

0 1 000 2 000 3 000 4 000 5 000

This map is one of a set compiled in 1971 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the University of Maine Agricultural Experiment Station.
Photobase from 1965 aerial photographs. Grid values based on Maine plane coordinate system, west zone. 1927 North American datum.

SOMERSET COUNTY, MAINE, SOUTHERN PART NO. 27

28

SOMERSET COUNTY, MAINE, SOUTHERN PART — SHEET NUMBER 28

(Joins sheet 19)

550 000 FEET

765 000 FEET

N

1 Mile

5 000 Feet

Scale 1:20 000

0 ¼ ½ ¾ 1

0 1 000 2 000 3 000 4 000 5 000

(Joins sheet 27)

755 000 FEET

530 000 FEET

(Joins sheet 37)

(Joins sheet 29)

NEWPORTLAND

EMBDEN

North New Portland

East New Portland

Fletcher Hill

Black Hill

Black Hill Pond

Meadow Brook

Flowerock Stream

Black Hill Stream

Newell Brook

GUILMAN STREAM

CARRABASSETT RIVER

SOMERSET COUNTY, MAINE, SOUTHERN PART NO. 28

Photobase from 1965 aerial photographs. Grid values based on Maine plane coordinate system, west zone. 1927 North American datum.

This map is one of a set compiled in 1971 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the University of Maine Agricultural Experiment Station.

SOMERSET COUNTY, MAINE, SOUTHERN PART — SHEET NUMBER 29

29

N

555 000 FEET

765 000 FEET

575 000 FEET

755 000 FEET

(Joins sheet 20)

(Joins sheet 28)

(Joins sheet 30)

(Joins sheet 38)

EMBDEN POND

Devereux Camps

Mud Pond

Boynton Pond

Sandy Pond

Fahi Pond

Black Stream

Mill Stream

Purington School

Embden

SOLON

KENNEBEC RIVER

MAINE CENTRAL

EMBDEN

1 Mile

5 000 Feet

Scale 1:20 000

0 5 000

¼ 1 000

½ 2 000

¾ 4 000

1 5 000

This map is one of a set compiled in 1971 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the University of Maine Agricultural Experiment Station.
Photobase from 1965 aerial photographs. Grid values based on Maine plane coordinate system, west zone. 1927 North American datum.

SOMERSET COUNTY, MAINE, SOUTHERN PART NO. 29

SOMERSET COUNTY, MAINE, SOUTHERN PART — SHEET NUMBER 30

30

N

(Joins sheet 21)

600 000 FEET

765 000 FEET

(Joins sheet 31)

SuD2

1 Mile

5 000 Feet

Scale 1:20 000

(Joins sheet 29)

755 000 FEET

Wn

CnD

580 000 FEET

(Joins sheet 39)

Gravel

Michaud

EVERGREEN CEMETERY

Stream

TRAIL

RIVER

KENNEBEC

SOLON

South Solon

Robbins Hill

Halfway Brook

MADISON

201

43

49

SOMERSET COUNTY, MAINE, SOUTHERN PART NO. 30

Photobase from 1965 aerial photographs. Grid values based on Maine plane coordinate system, west zone. 1927 North American datum.

This map is one of a set compiled in 1971 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the University of Maine Agricultural Experiment Station.

SOMERSET COUNTY, MAINE, SOUTHERN PART — SHEET NUMBER 31

This map is one of a set compiled in 1971 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the University of Maine Agricultural Experiment Station.
Photobase from 1965 aerial photographs. Grid values based on Maine plane coordinate system, west zone, 1927 North American datum.

SOMERSET COUNTY, MAINE, SOUTHERN PART NO. 31

605 000 FEET

765 000 FEET

755 000 FEET

625 000 FEET

(Joins sheet 30)

(Joins sheet 22)

(Joins sheet 32)

(Joins sheet 40)

31

N

1 Mile

5 000 Feet

Scale 1:20 000

1 000

2 000

3 000

4 000

5 000

Rice Corner

Cass Corner

Athens

Washington School

Porcupine Mountain

MOUNT REST CEMETERY

KINSMAN CEMETERY

Longley Brook

Kincaid Stream

Pine Brook

Boy Brook

WEST BRANCH WESSERUNSETT STREAM

Chapman Ridge

SOLON

MADISON

CORNVILLE

ATHENS

32

SOMERSET COUNTY, MAINE, SOUTHERN PART — SHEET NUMBER 32

N

(Joins sheet 23)

650 000 FEET

765 000 FEET

755 000 FEET

630 000 FEET

(Joins sheet 31)

(Joins sheet 33)

(Joins sheet 41)

Scale 1:20 000

1 Mile

5000 Feet

1 000

2 000

3 000

4 000

5 000

Talbot Hill

Parlin Hill

Waite Hill

Barker Pond

Corson Corner

HARMONY

ATHENS

CORNVILLE

HARTLAND

EAST RIDGE

Lemon Stream

Joaquin Brook

Mayoom Brook

Turne Brook

Black Brook

Moose Lake

TRAIL

SOMERSET COUNTY, MAINE, SOUTHERN PART NO. 32

Photobase from 1965 aerial photographs. Grid values based on Maine plane coordinate system, west zone, 1927 North American datum.

This map is one of a set compiled in 1971 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the University of Maine Agricultural Experiment Station.

SOMERSET COUNTY, MAINE, SOUTHERN PART — SHEET NUMBER 33

33

N

655 000 FEET

765 000 FEET

755 000 FEET

675 000 FEET

(Joins sheet 24)

(Joins sheet 32)

(Joins sheet 34)

(Joins sheet 42)

HARMONY

MOOSE

GREAT

ATHENS

HARTLAND

LAKE

Passaconaway Point

Round Island

Halfway Point

Packard Point

Latty Point

Sandbar Point

The Narrows

Northeast Cove

Rowell Hill

Starbird Pond

Stafford Pond

Wyman Brook

JORDAN CEMETERY

1 Mile

5 000 Feet

Scale 1:20 000

1 000 feet

2 000 feet

3 000 feet

4 000 feet

5 000 feet

This map is one of a set compiled in 1971 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the University of Maine Agricultural Experiment Station.
Photobase from 1965 aerial photographs. Grid values based on Maine plane coordinate system, west zone. 1927 North American datum.

SOMERSET COUNTY, MAINE, SOUTHERN PART NO. 33

34

SOMERSET COUNTY, MAINE, SOUTHERN PART — SHEET NUMBER 34

N

(Joins sheet 25)

700 000 FEET

765 000 FEET

(Joins sheet 33)

(Joins sheet 35)

755 000 FEET

680 000 FEET

(Joins sheet 43)

Scale 1:20 000

1 Mile 5 000 Feet

0 0

¼ 1 000

½ 2 000

¾ 4 000

1 5 000

Wild Goose Club

The Pinnacles

Stronghold

Wildwood

St Albans

GREAT MOOSE LAKE

CENTRAL MOOSE LAKE

SEBASTICOOK RIVER

INDIAN POND

Meloon Brook

Ray Brook

Indian Stream

GRAVEL PIT

MAINE

HARTLAND

SOMERSET COUNTY, MAINE, SOUTHERN PART NO. 34

Photobase from 1965 aerial photographs. Grid values based on Maine plane coordinate system, west zone, 1927 North American datum.

This map is one of a set compiled in 1971 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the University of Maine Agricultural Experiment Station.

(Joins sheet 26)

(Joins sheet 34)

(Joins sheet 44)

705 000 FEET

765 000 FEET

725 000 FEET

755 000 FEET

N

Scale 1:20 000

1 Mile

5 000 Feet

Lyford Corner

Nutter Corner

Johnson Corner

Dow Corner

Palmer Hill

SOMERSET COUNTY

PENOBSCOT COUNTY

Shell Brook

Harrison Stream

Mulligan Stream

TRAIL

SALBA NAS

PALMYRA

DxB DyB BaB BgB Mr TtB TkC TtC Mo Pa DyC BaC2 BgC TkD RtC

This map is one of a set compiled in 1971 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the University of Maine Agricultural Experiment Station.
Photobase from 1965 aerial photographs. Grid values based on Maine plane coordinate system, west zone, 1927 North American datum.

SOMERSET COUNTY, MAINE, SOUTHERN PART NO. 35

36

SOMERSET COUNTY, MAINE, SOUTHERN PART — SHEET NUMBER 36

(Joins sheet 27)

525 000 FEET

750 000 FEET

N

1 Mile

5 000 Feet

Scale 1:20 000

0 0

¼ 1 000

½ 2 000

¾ 4 000

1 5 000

735 000 FEET

505 000 FEET

(Joins sheet 37)

New Portland

Great Works

Strickland Hill

Stream

Brook

Lemon

Gammon Pond

FRANKLIN COUNTY

TRAIL

CARRABASSETT

N E W P O R T L A N D

SOMERSET COUNTY, MAINE, SOUTHERN PART NO. 36

Photobase from 1965 aerial photographs. Grid values based on Maine plane coordinate system, west zone. 1927 North American datum.

This map is one of a set compiled in 1971 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the University of Maine Agricultural Experiment Station.

SOMERSET COUNTY, MAINE, SOUTHERN PART — SHEET NUMBER 37

37

N

530 000 FEET

750 000 FEET

735 000 FEET

550 000 FEET

(Joins sheet 28)

(Joins sheet 36)

(Joins sheet 38)

(Joins sheet 45)

NEW PORTLAND

ANSON

EMBDEN

CARRABASSETT RIVER

Big Brook

New Portland Hill

FRANKLIN COUNTY TRAIL

1 Mile 5 000 Feet

Scale 1:20 000

This map is one of a set compiled in 1971 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the University of Maine Agricultural Experiment Station.
Photobase from 1965 aerial photographs. Grid values based on Maine plane coordinate system, west zone. 1927 North American datum.

SOMERSET COUNTY, MAINE, SOUTHERN PART NO. 37

SOMERSET COUNTY, MAINE, SOUTHERN PART — SHEET NUMBER 38

38

N

1 Mile
5 000 Feet

Scale 1:20 000

0 0 1/4 1 000 1/2 2 000 3/4 3 000 1 4 000 5 000

(Joins sheet 37)

(Joins sheet 29)

(Joins sheet 39)

(Joins sheet 46)

575 000 FEET

750 000 FEET

735 000 FEET

555 000 FEET

EMBDEN

NORRIDGEWOCK

NORTH ANSON

ANSON

MADISON

Black Hill

Stream

Mill Stream

Mill Brook

Run

CARRABASSETT RIVER

KENNEBEC RIVER

MAINE CENTRAL TRAIL

GRAVEL PIT

SOMERSET COUNTY, MAINE, SOUTHERN PART NO. 38

Photobase from 1965 aerial photographs. Grid values based on Maine plane coordinate system, west zone. 1927 North American datum.

This map is one of a set compiled in 1971 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the University of Maine Agricultural Experiment Station.

SOMERSET COUNTY, MAINE, SOUTHERN PART — SHEET NUMBER 39

39

N

580 000 FEET

750 000 FEET

(Joins sheet 30)

(Joins sheet 38)

(Joins sheet 40)

(Joins sheet 47)

735 000 FEET

600 000 FEET

SOLON

EMBDEN

KENNEBEC RIVER

Twelve Corners

JEWETT CEMETERY

Thurston Hill

Earnes Hill

MADISON

LAKE WESSERUNSETT

Thompson Point

TRAIL

201

43

Ha Mn Wn Lk Wa Sc StB BuB MbB ChC ChE CnC CnE BkB BkC LzC LyB LyC PcB PdB PdC BhB BhC AaB AaC AaD Sk Dz Mr Mo DxB BaB BaC2 BgC TtB TtC TkC Pa

1 Mile

5 000 Feet

Scale 1:20 000

1/4 1/2 3/4 1

1 000 2 000 3 000 4 000 5 000

This map is one of a set compiled in 1971 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the University of Maine Agricultural Experiment Station.
Photobase from 1965 aerial photographs. Grid values based on Maine plane coordinate system, west zone. 1927 North American datum.

SOMERSET COUNTY, MAINE, SOUTHERN PART NO. 39

N

1 Mile

5 000 Feet

0 0

Scale 1:20 000

1/4 1 000

1/2 2 000

3/4 3 000

1 4 000

5 000

(Joins sheet 31)

(Joins sheet 39)

(Joins sheet 41)

(Joins sheet 48)

625 000 FEET

750 000 FEET

735 000 FEET

605 000 FEET

AaB

BuB

Ha

TtC

Lower Mill

East Madison

Wesserunsett Lake

Wesserunsett Stream

Kinsman Brook

Hinds Brook

Paine Stream

Mr. Bryant Brook

West Mr. Bryant Brook

Stream

Brook

MADISON

CORNVILLE

GRANGE

SOMERSET COUNTY, MAINE, SOUTHERN PART NO. 40

Photobase from 1965 aerial photographs. Grid values based on Maine plane coordinate system, west zone. 1927 North American datum.

This map is one of a set compiled in 1971 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the University of Maine Agricultural Experiment Station.

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Photobase from 1965 aerial photographs. Grid values based on Maine plane coordinate system, west zone. 1927 North American datum.

SOMERSET COUNTY, MAINE, SOUTHERN PART NO. 41

41

N

630 000 FEET

750 000 FEET

735 000 FEET

650 000 FEET

(Joins sheet 32)

(Joins sheet 40)

(Joins sheet 42)

(Joins sheet 49)

ATHENS

CORNVILLE

HARTLAND

CANAAN

Tuttle Brook

Stream

Bog Pond

E Br Black Str

Black

WESSERUNSETT

GRAVEL PIT

TRAIL

Burrill Hill

Cornville Church

Waltons Mill

Gould Corner

1 Mile

5 000 Feet

Scale 1:20 000

42

SOMERSET COUNTY, MAINE, SOUTHERN PART — SHEET NUMBER 42

N

(Joins sheet 33)

675 000 FEET

750 000 FEET

1 Mile

5 000 Feet

Scale 1:20 000

0 ¼ ½ ¾ 1

1 000 2 000 3 000 4 000 5 000

(Joins sheet 41)

(Joins sheet 43)

735 000 FEET

655 000 FEET

(Joins sheet 50)

Starbird Pond

Withee Bk

Stafford Pond

Mud Pond

Stafford Hill

East Branch Black Stream

Juniper Bog

Goodwin Hill

Tibbetts Hill

Huff Hill

Manson Corner

Thompson Corner

Thompson Brook

TRAIL

HARTLAND

CANAAN

SOMERSET COUNTY, MAINE, SOUTHERN PART NO. 42

Photobase from 1965 aerial photographs. Grid values based on Maine plane coordinate system, west zone: 1927 North American datum.

This map is one of a set compiled in 1971 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the University of Maine Agricultural Experiment Station.

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Photobase from 1965 aerial photographs. Grid values based on Maine plane coordinate system, west zone, 1927 North American datum.

SOMERSET COUNTY, MAINE, SOUTHERN PART NO. 43

(Joins sheet 42)

(Joins sheet 34)

(Joins sheet 44)

(Joins sheet 51)

680 000 FEET

700 000 FEET

750 000 FEET

735 000 FEET

43

N

1 Mile

5 000 Feet

Scale 1:20 000

ST ALBANS

Hartland

Thompson

PALMYRA

Furbush Hill

Ford Hill

Negro Hill

PINE GROVE CEMETERY

WARREN HILL CEMETERY

MAINE CENTRAL R.R.

EASTERN RAILROAD

GRAVEL PIT

TRAIL

Thompson Brook

Meadow Brook

Indian Brook

Prall Brook

Smith Brook

Johonnett Brook

Sprague Stream

Raul Brook

SOMERSET RIVER

SOMERSET COUNTY, MAINE, SOUTHERN PART — SHEET NUMBER 44

(44)

N

(Joins sheet 35)

725 000 FEET

750 000 FEET

1 Mile

5 000 Feet

Scale 1:20 000

(Joins sheet 43)

735 000 FEET

705 000 FEET

(Joins sheet 52)

ST ALBANS

PALMYRA

Miller Corner

Sanborn Corner

Marsh Corner

Palmer Hill

Lang Hill

Libby Hill

Palmyra

VILLAGE CEMETERY

Thomson Brook

Smith Brook

Mulligan Stream

Hicks Pond

Whites Pond

Rogg Brook

Nokomis Pond

PENOBSCOT COUNTY

TRAIL

water

Mr Mo TtB TtC TkC DxB DyB BaB BgB BgC BgD Pa Wa MbB StB AaB Sk

SOMERSET COUNTY, MAINE, SOUTHERN PART NO. 44

Photobase from 1965 aerial photographs. Grid values based on Maine plane coordinate system, west zone. 1927 North American datum.

This map is one of a set compiled in 1971 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the University of Maine Agricultural Experiment Station.

SOMERSET COUNTY, MAINE, SOUTHERN PART — SHEET NUMBER 45

45

N

530 000 FEET

730 000 FEET

720 000 FEET

550 000 FEET

(Joins sheet 37)

(Joins sheet 46)

(Joins sheet 53)

Scale 1:20 000

1 Mile

5 000 Feet

0 0

¼ 1 000

½ 2 000

¾ 4 000

1 5 000

Greenwood

Franklin County

Lemon

Stream

Peltan

Brook

Gamape Hill

Barton Hill

Hall and Waite Hill

Lane Hill

Dane Corner

ANSON

MbB

This map is one of a set compiled in 1971 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the University of Maine Agricultural Experiment Station.
Photobase from 1965 aerial photographs. Grid values based on Maine plane coordinate system, west zone, 1927 North American datum.

SOMERSET COUNTY, MAINE, SOUTHERN PART NO. 45

SOMERSET COUNTY, MAINE, SOUTHERN PART — SHEET NUMBER 46

(46)

N

(Joins sheet 38)

575 000 FEET

730 000 FEET

(Joins sheet 45)

(Joins sheet 47)

720 000 FEET

555 000 FEET

(Joins sheet 54)

1 Mile

5 000 Feet

Scale 1:20 000

0 ¼ ½ ¾ 1

0 1 000 2 000 3 000 4 000 5 000

ANSON

MADISON

Getchell Brook

Hilton Hill

RIVER

KENNEBEC

Weston Island

FOREST HILL CEMETERY

Anson

MADISON

MAINE CENTRAL R.R.

TRAIL

ALT 201

43

SOMERSET COUNTY, MAINE, SOUTHERN PART NO. 46

Photobase from 1965 aerial photographs. Grid values based on Maine plane coordinate system, west zone. 1927 North American datum.

This map is one of a set compiled in 1971 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the University of Maine Agricultural Experiment Station.

SOMERSET COUNTY, MAINE, SOUTHERN PART — SHEET NUMBER 47

47

N

(Joins sheet 39)

(Joins sheet 46)

(Joins sheet 48)

(Joins sheet 55)

580 000 FEET

730 000 FEET

720 000 FEET

600 000 FEET

Black Point

WESSERUNSETT LAKE

Blackwell Corner

Barron Corner

Ellis Corner

Martin Corner

White School Corner

Lakewood

Pooler Brook

Blackwell Hill

KENNEBEC RIVER

Scale 1:20 000

1 Mile

5 000 Feet

This map is one of a set compiled in 1971 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the University of Maine Agricultural Experiment Station.
Photobase from 1965 aerial photographs. Grid values based on Maine plane coordinate system, west zone. 1927 North American datum.

SOMERSET COUNTY, MAINE, SOUTHERN PART NO. 47

SOMERSET COUNTY, MAINE, SOUTHERN PART — SHEET NUMBER 48

(48)

N

Scale 1:20 000

1 Mile

5 000 Feet

(Joins sheet 40)

(Joins sheet 47)

(Joins sheet 49)

(Joins sheet 56)

625 000 FEET

630 000 FEET

729 000 FEET

605 000 FEET

WESSERUNSETT LAKE

WEST BRANCH WESSERUNSETT STREAM

WEST RIDGE

Brook

Cornville

Bog

Devils Bog

Brick School

Rowell Bog

Rowell Hill

Smith Pond

Hilton Hill

STREAM

Cold

MADISON

KOWHEGAN

WASSERUNSETT

Pa

Rowell Bog

Devils Bog

Smith Pond

Cold

STREAM

Lk

Wa

AaB

BaB

BaB (Joins sheet 56)

BuC2

TtB

SOMERSET COUNTY, MAINE, SOUTHERN PART — NO. 48

Photobase from 1965 aerial photographs. Grid values based on Maine plane coordinate system, West Zone, 1927 North American datum.

This map is one of a set compiled in 1971 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the University of Maine Agricultural Experiment Station.

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Photobase from 1965 aerial photographs. Grid values based on Maine plane coordinate system, west zone. 1927 North American datum.

SOMERSET COUNTY, MAINE, SOUTHERN PART NO. 49

630 000 FEET

730 000 FEET

720 000 FEET

650 000 FEET

(Joins sheet 41)

(Joins sheet 48)

(Joins sheet 50)

(Joins sheet 57)

Gould Corner

RICHARDS CEMETERY

Mitchell Corner

The Notch

Whittemore Hill

Loomis Hill

EAST RIDGE

WESSERUNSETT STREAM

Black Stream

West Branch

CORNVILLE

SKOWHEGAN

N

1 Mile

5 000 Feet

Scale 1:20 000

SOMERSET COUNTY, MAINE, SOUTHERN PART — SHEET NUMBER 50

50

N

(Joins sheet 42)

675 000 FEET

730 000 FEET

(Joins sheet 51)

(Joins sheet 49)

720 000 FEET

655 000 FEET

(Joins sheet 58)

Scale 1:20 000

1 Mile 5 000 Feet

0 0

¼ 1 000

½ 2 000

¾ 3 000

1 4 000

1¼ 5 000

Morrill Pond

Tibbetts Hill

Bowley Pond

Tuttle Hill

Burton Corner

Chase Hill

Conconter Hill

Slab City Cemetery

Fuller Corner Cemetery

Browns Corner

Stream

Brook

Trail

Sibley Pond

CANAAN

HARTLAND

PITTSFIELD

SOMERSET COUNTY, MAINE, SOUTHERN PART NO. 50

Photobase from 1965 aerial photographs. Grid values based on Maine plane coordinate system, west zone. 1927 North American datum.

This map is one of a set compiled in 1971 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the University of Maine Agricultural Experiment Station.

SOMERSET COUNTY, MAINE, SOUTHERN PART — SHEET NUMBER 51

51

N

This map is one of a set compiled in 1971 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the University of Maine Agricultural Experiment Station.
Photobase from 1965 aerial photographs. Grid values based on Maine plane coordinate system, west zone, 1927 North American datum.

SOMERSET COUNTY, MAINE, SOUTHERN PART NO. 51

680 000 FEET

730 000 FEET

700 000 FEET

720 000 FEET

(Joins sheet 50)

(Joins sheet 43)

(Joins sheet 52)

(Joins sheet 59)

HARTLAND

PITTSFIELD

PALMYRA

Meadow Brook

SEBASTICOOK

Lk Wnt

Johnson Brook

Maddockawata

RIVER

DOUGLAS POND

MAINE CENTRAL

GRAVEL PIT

GRAVEL PIT

POOLER CEMETERY

West Palmyra

Phillips Corner

1 Mile

5,000 Feet

Scale 1:20 000

0 1/4 1/2 3/4 1

0 1 000 2 000 3 000 4 000 5 000

52

SOMERSET COUNTY, MAINE, SOUTHERN PART — SHEET NUMBER 52

N

725 000 FEET

730 000 FEET

720 000 FEET

705 000 FEET

(Joins sheet 44)

(Joins sheet 51)

(Joins sheet 60)

Scale 1:20 000

1 Mile

5 000 Feet

1 000 Feet

2 000 Feet

3 000 Feet

4 000 Feet

5 000 Feet

Bog Corner

Goodwin Corner

Hurd Corner

Dagtown

PITTSFIELD

PALMYRA

DETROIT

Moosehead Brook

Intermittent

Robbers Brook

Rogg Brook

TRAIL

PENOBSCOT COUNTY

MAINE CENTRAL

95

11

100

220

2

SOMERSET COUNTY, MAINE, SOUTHERN PART NO. 52

Photobase from 1965 aerial photographs. Grid values based on Maine plane coordinate system, west zone. 1927 North American datum.

This map is one of a set compiled in 1971 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the University of Maine Agricultural Experiment Station.

SOMERSET COUNTY, MAINE, SOUTHERN PART — SHEET NUMBER 53

53

N

(Joins sheet 45)

530 000 FEET

715 000 FEET

705 000 FEET

555 000 FEET

(Joins sheet 54)

(Joins sheet 61)

A N S O N

S T A R K S

Lemon

FRANKLIN COUNTY

Stream

LEMON STREAM

Hilton Brook

TRAIL

1 Mile

5 000 Feet

Scale 1:20 000

This map is one of a set compiled in 1971 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the University of Maine Agricultural Experiment Station.
Photobase from 1965 aerial photographs; Grid values based on Maine plane coordinate system, west zone. 1927 North American datum.

SOMERSET COUNTY, MAINE, SOUTHERN PART NO. 53

54

SOMERSET COUNTY, MAINE, SOUTHERN PART — SHEET NUMBER 54

N

1 Mile
5 000 Feet
0
Scale 1:20 000
1 000
2 000
3 000
4 000
5 000

(Joins sheet 53)

(Joins sheet 46)

(Joins sheet 55)

(Joins sheet 62)

575 000 FEET

560 000 FEET

715 000 FEET

705 000 FEET

Hilton Hill

Anson

MADISON

ANSON

STARK

MADISON

Five Corners

ATHEARN CEMETERY

GRAVEL PIT

Getchell

Nevin Pond

Hilton

Brook

Jones Brook

Old Point

Old Point Pond

RIVER

KENNEBEC RIVER

SANDY RIVER

NORRIDGEWOCK

MAINE CENTRAL R.R.

TRAIL

ALT 201

SOMERSET COUNTY, MAINE, SOUTHERN PART NO. 54

Photobase from 1965 aerial photographs. Grid values based on Maine plane coordinate system, west zone. 1927 North American datum.

This map is one of a set compiled in 1971 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the University of Maine Agricultural Experiment Station.

SOMERSET COUNTY, MAINE, SOUTHERN PART — SHEET NUMBER 55

55

580 000 FEET

715 000 FEET

(Joins sheet 47)

(Joins sheet 54)

(Joins sheet 56)

705 000 FEET

600 000 FEET

(Joins sheet 63)

N

1 Mile

5 000 Feet

Scale 1:20 000

1 5 000 ¾ 4 000 ½ 3 000 ¼ 2 000 0 1 000 0

MADISON

NORRIDGEWOCK

LONGLEY CEMETERY

Jones Brook

Ward Hill

TRAIL

ALT 201

Kennebec R.

This map is one of a set compiled in 1971 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the University of Maine Agricultural Experiment Station.
Photobase from 1965 aerial photographs. Grid values based on Maine plane coordinate system, west zone, 1927 North American datum.

SOMERSET COUNTY, MAINE, SOUTHERN PART NO. 55

56

N

(Joins sheet 48)

625 000 FEET

715 000 FEET

705 000 FEET

605 000 FEET

(Joins sheet 64)

(Joins sheet 55)

(Joins sheet 57)

1 Mile

5 000 Feet

Scale 1:20 000

0 0 ¼ ½ ¾ 1

1 000 2 000 3 000 4 000 5 000

MADISON

NORRIDGEWOCK

SKOWHEGAN

WHITEGAN

Melbons Mills

SKOWHEGAN
(county seat)

KENNEBEC RIVER

WEST BRANCH

STREAM

Brook

Cold

Ledge

Whitten

Great Eddy

NORTH CEMETERY

SOUTH CEMETERY

GRAVEL PIT

MAINE CENTRAL

Oak Islands

SOMERSET COUNTY, MAINE, SOUTHERN PART NO. 56

Photobase from 1965 aerial photographs. Grid values based on Maine plane coordinate system, west zone. 1927 North American datum.

This map is one of a set compiled in 1971 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the University of Maine Agricultural Experiment Station.

SOMERSET COUNTY, MAINE, SOUTHERN PART — SHEET NUMBER 57

This map is one of a set compiled in 1971 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the University of Maine Agricultural Experiment Station.
Photobase from 1965 aerial photographs. Grid values based on Maine plane coordinate system, west zone, 1927 North American datum.

SOMERSET COUNTY, MAINE, SOUTHERN PART NO. 57

630 000 FEET

715 000 FEET

705 000 FEET

650 000 FEET

(Joins sheet 56)
(Joins sheet 49)
(Joins sheet 58)
(Joins sheet 65)

57

N

1 Mile

5 000 Feet

Scale 1:20 000

1 0 1 000

¼ 2 000

½ 3 000

¾ 4 000

1 5 000

SKOWHEGAN

Currier Hill

Foster Hill

Eaton Mountain

Pratt Hill

Goodwin Hill

Jewell Hill

Canaan

George Lake

Round Pond

Byron Stream

Stuffird Brook

Ridge

Eaton

Kennebec River

Oak Islands

Oaks Pond

CAMP MODIN FOR BOYS

CAMP MODIN FOR GIRLS

58

N

(Joins sheet 50)

675 000 FEET

715 000 FEET

705 000 FEET

655 000 FEET

(Joins sheet 57)

(Joins sheet 59)

(Joins sheet 66)

1 Mile

5 000 Feet

Scale 1:20 000

0 ¼ ½ ¾ 1

0 1 000 2 000 3 000 4 000 5 000

POND

SIBLEY

BLACK STREAM

STREAM

CARRABASSETT

South Hoyd Brook

Canaan Bog Stream

Cooper Brook

Bog

Mud Pond

Nelson Hill

Church Hill

Union Church

Goodwin Hill

Emerson Corner

Tilton Corner

WEST PITTSFIELD CEMETERY

FAIRVIEW CEMETERY

GRAVEL PIT

Canaan

PITTSFIELD

SOMERSET COUNTY, MAINE, SOUTHERN PART NO. 58

Photobase from 1965 aerial photographs. Grid values based on Maine plane coordinate system, west zone. 1927 North American datum.

This map is one of a set compiled in 1971 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the University of Maine Agricultural Experiment Station.

SOMERSET COUNTY, MAINE, SOUTHERN PART — SHEET NUMBER 59

59

N

680 000 FEET

715 000 FEET

(Joins sheet 58)

(Joins sheet 51)

(Joins sheet 60)

(Joins sheet 67)

700 000 FEET

705 000 FEET

Scale 1:20 000

1 Mile

5000 Feet

Mosher Corner

Weeks Corner

PITTSFIELD

Waverley

Airport

Farnham

Brook

SEBASTICOOK RIVER

BIG MEADOW BOG

MAINE CENTRAL

GRAVEL PIT

WALDO CO

SOMERSET COUNTY, MAINE, SOUTHERN PART NO. 59

This map is one of a set compiled in 1971 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the University of Maine Agricultural Experiment Station.
Photobase from 1965 aerial photographs. Grid values based on Maine plane coordinate system, west zone. 1927 North American datum.

60

SOMERSET COUNTY, MAINE, SOUTHERN PART — SHEET NUMBER 60

N

(Joins sheet 52)

725 000 FEET

715 000 FEET

705 000 FEET

(Joins sheet 59)

(Joins inset A, sheet 68)

(Joins sheet 68)

Scale 1:20 000

1 Mile

5 000 Feet

0 0

¼ 1 000

½ 2 000

¾ 3 000

1 4 000

1¼ 5 000

PALMYRA

Dogtown

Houston Corner

PITTSFIELD

Detroit

Plummer Corner

Airport

DETROIT

PITTSFIELD

BIG MEADOW BOG

MAINE CENTRAL

SEBASTICOOK RIVER

EAST BRANCH SEBASTICOOK RIVER

PENOBSCOT COUNTY

WALDO COUNTY

SOMERSET COUNTY, MAINE, SOUTHERN PART NO. 60

Photobase from 1965 aerial photographs. Grid values based on Maine plane coordinate system, west zone. 1927 North American datum.

This map is one of a set compiled in 1971 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the University of Maine Agricultural Experiment Station.

SOMERSET COUNTY, MAINE, SOUTHERN PART — SHEET NUMBER 61

61

N

535 000 FEET

700 000 FEET

(Joins sheet 53)

(Joins sheet 62)

(Joins sheet 69)

555 000 FEET

685 000 FEET

1 Mile

5 000 Feet

Scale 1:20 000

0 ¼ ½ ¾ 1

1 000 2 000 3 000 4 000 5 000

LEMON

STREAM

FRANKLIN COUNTY

Joslyn Brook

TRAIL

FREDERIC CEMETERY

LOCKE CEMETERY

Starks

S T A R K S

Lc BkB BkC BkE BhB BhC PdB PdC LyB LyC LzC LzE MbB MbE PcB BuB BuC2 SuC2 SuD2 AaB AaC AaD Ha Wn Wa Sc Sk StB Lk CnD RfC

This map is one of a set compiled in 1971 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the University of Maine Agricultural Experiment Station.
Photobase from 1965 aerial photographs. Grid values based on Maine plane coordinate system, west zone, 1927 North American datum.

SOMERSET COUNTY, MAINE, SOUTHERN PART NO. 61

62

SOMERSET COUNTY, MAINE, SOUTHERN PART — SHEET NUMBER 62

N

(Joins sheet 54)

575 000 FEET

700 000 FEET

(Joins sheet 61)

(Joins sheet 63)

685 000 FEET

560 000 FEET

(Joins sheet 70)

1 Mile

5 000 Feet

Scale 1:20 000

0 1/4 1/2 3/4 1

0 1 000 2 000 3 000 4 000 5 000

SOMERSET COUNTY, MAINE, SOUTHERN PART NO. 62

Photobase from 1965 aerial photographs. Grid values based on Maine plane coordinate system, west zone, 1927 North American datum.

This map is one of a set compiled in 1971 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the University of Maine Agricultural Experiment Station.

SOMERSET COUNTY, MAINE, SOUTHERN PART — SHEET NUMBER 63

63

N

580 000 FEET

700 000 FEET

600 000 FEET

685 000 FEET

(Joins sheet 55)

(Joins sheet 62)

(Joins sheet 64)

(Joins sheet 71)

KENNEBEC RIVER

MAINE CENTRAL

Bombazee Rips

Rogers Brook

Jones Brook

Sunset Hill

OLD OAK CEMETERY

Norridgewock Mill Stream

NORRIDGEWOCK

1 Mile

5 000 Feet

Scale 1:20 000

This map is one of a set compiled in 1971 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the University of Maine Agricultural Experiment Station.
Photobase from 1965 aerial photographs. Grid values based on Maine plane coordinate system, west zone. 1927 North American datum.

SOMERSET COUNTY, MAINE, SOUTHERN PART NO. 63

SOMERSET COUNTY, MAINE, SOUTHERN PART — SHEET NUMBER 64

64

N

1 Mile

5 000 Feet

Scale 1:20 000

0

1/4 1 000

1/2 2 000

3/4 3 000

1 4 000

5 000

(Joins sheet 56)

(Joins sheet 63)

(Joins sheet 65)

(Joins sheet 72)

625 000 FEET

700 000 FEET

685 000 FEET

610 000 FEET

KENNEBEC RIVER

Currier Brook

Smith Brook

TRAIL

Bigelow Hill

SKOWHEGAN

SOMERSET COUNTY, MAINE, SOUTHERN PART NO. 64

Photobase from 1965 aerial photographs. Grid values based on Maine plane coordinate system, west zone. 1927 North American datum.

This map is one of a set compiled in 1971 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the University of Maine Agricultural Experiment Station.

SOMERSET COUNTY, MAINE, SOUTHERN PART — SHEET NUMBER 65

630 000 FEET

700 000 FEET

650 000 FEET

685 000 FEET

65

N

(Joins sheet 57)

(Joins sheet 64)

(Joins sheet 66)

(Joins sheet 73)

KENNEBEC RIVER

SKOWHEGAN

Canaan

Oaks Pond

Stanford Brook

Oak Stream

Carrabassett Stream

Bog

POOLER CEMETERY

GRAVEL PIT

CENTRAL MAINE POWER CO.

Scale 1:20 000

1 Mile

5 000 Feet

This map is one of a set compiled in 1971 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the University of Maine Agricultural Experiment Station.
Photobase from 1965 aerial photographs. Grid values based on Maine plane coordinate system, west zone, 1927 North American datum.

SOMERSET COUNTY, MAINE, SOUTHERN PART NO. 65

N

Scale 1:20 000

1 Mile 5 000 Feet

0 0

¼ 1 000

½ 2 000

¾ 3 000

4 000

1 5 000

(Joins sheet 58)

(Joins sheet 65)

(Joins sheet 67)

675 000 FEET

700 000 FEET

685 000 FEET

655 000 FEET

Nelson Hill

Cooper Brook

Stratton Bog

South Tuttle Brook

Tuttle Brook

CANADA

KENNEBEC COUNTY

SOMERSET COUNTY, MAINE, SOUTHERN PART NO. 66

Photobase from 1965 aerial photographs. Grid values based on Maine plane coordinate system, west zone. 1927 North American datum.

This map is one of a set compiled in 1971 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the University of Maine Agricultural Experiment Station.

SOMERSET COUNTY, MAINE, SOUTHERN PART — SHEET NUMBER 67

This map is one of a set compiled in 1971 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the University of Maine Agricultural Experiment Station.
Photobase from 1965 aerial photographs. Grid values based on Maine plane coordinate system, west zone. 1927 North American datum.

SOMERSET COUNTY, MAINE, SOUTHERN PART NO. 67

67

N

680 000 FEET

700 000 FEET

685 000 FEET

(Joins sheet 59)
(Joins sheet 66)
(Joins sheet 68)
(Joins inset, sheet 73)

Nash Corner

EELWEIR BRIDGE

WALDO COUNTY

KENNEBEC COUNTY

SEBASTICOOK RIVER

PITTSFIELD

MAINE CENTRAL

Mr DyB DxB BgB BaB Mo BaC2 DyC TtB TkC BuB BuC2 AaB AaC BgC Sc Sk Bo Pa Wn Ha

1 Mile
5 000 Feet
Scale 1:20 000

68

N

(Joins sheet 60)

725 000 FEET

700 000 FEET

INSET A

INSET B

731 000 FEET

710 000 FEET

705 000 FEET

(Joins inset below)

733 000 FEET

700 000 FEET

(Joins sheet 60)

(Joins right)

(Joins inset B)

(Joins inset above)

730 000 FEET

690 000 FEET

685 000 FEET

705 000 FEET

1 000 AND 5 000-FOOT GRID TICKS

3 000 AND 5 000-FOOT GRID TICKS

1 Mile

5 000 Feet

Scale 1:20 000

0 ¼ ½ ¾ 1

0 1 000 2 000 3 000 4 000 5 000

PITTSFIELD

SEBASTICOOK RIVER

WALDO COUNTY

PENOBSCOT COUNTY

WALDO COUNTY

BIG MEADOW BOG

PELTOMA BRIDGE

Beartrap Brook

Carlton Pond

Carlton Bog

Beech Hill

DEXTER

Mn Mr Pa Sc Wa Wn Lk StB MbB BuB Bo BgB BgC BaB DyB DyC DxB DxC TtB TtC TkC TkD Mo BgC2 BaC2 CnC HtD

SOMERSET COUNTY, MAINE, SOUTHERN PART NO. 68

Photobase from 1965 aerial photographs. Grid values based on Maine plane coordinate system, west zone. 1927 North American datum.

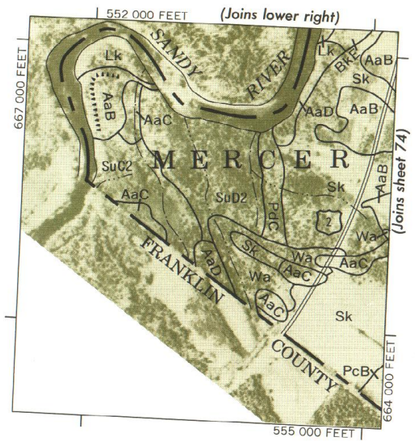
This map is one of a set compiled in 1971 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the University of Maine Agricultural Experiment Station.

SOMERSET COUNTY, MAINE, SOUTHERN PART — SHEET NUMBER 69

69

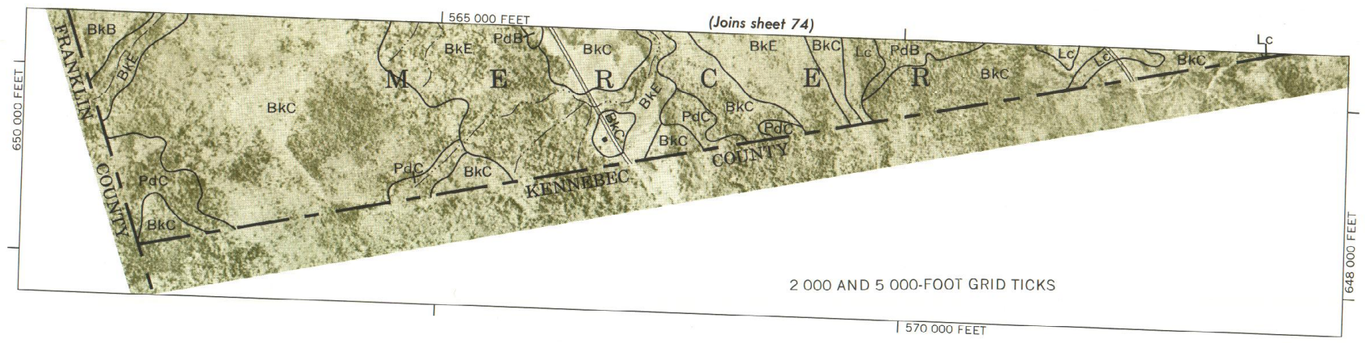
N

INSET A



3 000-FOOT GRID TICKS

INSET B



2 000 AND 5 000-FOOT GRID TICKS

1 Mile
5 000 Feet
Scale 1:20 000

This map is one of a set compiled in 1971 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the University of Maine Agricultural Experiment Station.
Photobase from 1965 aerial photographs. Grid values based on Maine plane coordinate system, west zone, 1927 North American datum.

SOMERSET COUNTY, MAINE, SOUTHERN PART NO. 69

SOMERSET COUNTY, MAINE, SOUTHERN PART — SHEET NUMBER 70

70

N

(Joins sheet 62) SuD2 Sc Wa

580 000 FEET

680 000 FEET

(Joins sheet 71)

(Joins sheet 69)

Scale 1:20 000

1 Mile

5 000 Feet

0 ¼ ½ ¾ 1

1 000 2 000 3 000 4 000 5 000

670 000 FEET

560 000 FEET

(Joins sheet 74)

AaB Sk

SANDY RIVER

STARKS

Bowden Island

Farrand Island

Indian Stream

Wilham Brook

Little Beech Hill

Mercer

East Mercer

Beech Hill

Oak Hill

SMITHFIELD

MERCER

SOMERSET COUNTY, MAINE, SOUTHERN PART NO. 70

Photobase from 1965 aerial photographs. Grid values based on Maine plane coordinate system, west zone. 1927 North American datum.

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SOMERSET COUNTY, MAINE, SOUTHERN PART NO. 71

580 000 FEET

680 000 FEET

670 000 FEET

605 000 FEET

(Joins sheet 70)

(Joins sheet 63)

(Joins sheet 72)

(Joins sheet 75)

71

N

1 Mile 5 000 Feet

Scale 1:20 000

NORRIDGEWOCK

SMITHFIELD

FAIRFIELD

THE MAINE CENTRAL PLAINS

Burrill Hill

McIntyre Hill

Ross Hill

Wilder Hill

Oak Hill

Dodling Hill

Little Dodling Hill

Alder Brook

Martin Stream

Mill Stream

COULD CEMETERY

TRAIL

72

SOMERSET COUNTY, MAINE, SOUTHERN PART — SHEET NUMBER 72

N

(Joins sheet 64)

1 625 000 FEET

Mr TtC

680 000 FEET

(Joins sheet 73)

1 Mile

5 000 Feet

Scale 1:20 000

(Joins sheet 71)

670 000 FEET

(Joins sheet 76)

610 000 FEET

SKOWHEGAN

NORRIDGEWOCK

FAIRFIELD

Little Bear Mountain

Bear Mountain

Larone

COVELL CEMETERY

Craigin Brook

Martin Stream

Lost Brook

MAINE CENTRAL

SOMERSET COUNTY, MAINE, SOUTHERN PART NO. 72

Photobase from 1965 aerial photographs. Grid values based on Maine plane coordinate system, west zone. 1927 North American datum

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N

630 000 FEET

(Joins sheet 65)

680 000 FEET

683 000 FEET

(Joins sheet 67)

KENNEBEC COUNTY

KENNEBEC RIVER

CANAAN

SKOWHEGAN

PITTSFIELD

FAIRFIELD

Hinckley

Craigin

Martin

Johnson Bk

Stinson Brook

Correlassett Stream

MAINE CENTRAL

SEBASTICOOK RIVER

WALDO COUNTY

KENNEBEC COUNTY

(Joins sheet 72)

(Joins sheet 77)

3 000 AND 5 000-FOOT GRID TICKS

695 000 FEET

680 000 FEET

670 000 FEET

655 000 FEET

1 Mile

5 000 Feet

Scale 1:20 000

SOMERSET COUNTY, MAINE, SOUTHERN PART NO. 73

74

SOMERSET COUNTY, MAINE, SOUTHERN PART — SHEET NUMBER 74

N

(Joins sheet 70)

(Joins inset A, sheet 69)

580 000 FEET

665 000 FEET

655 000 FEET

560 000 FEET

(Joins inset B, sheet 69)

(Joins sheet 75)

1 Mile

5 000 Feet

Scale 1:20 000

0 ¼ ½ ¾ 1

0 1 000 2 000 3 000 4 000 5 000

Oak Hill

Beech Hill

SMITH POND

NORTH POND

Bog Stream

Ladd Pond

Rapids

Pattee Brook

Birch Point

Hinton Brook

Stream

FRANKLIN COUNTY

KENNEBEC COUNTY

HAMPSHIRE HILL CEMETERY

LADD CEMETERY

Trail

Road

SOMERSET COUNTY, MAINE, SOUTHERN PART NO. 74

Photobase from 1965 aerial photographs. Grid values based on Maine plane coordinate system, west zone. 1927 North American datum.

This map is one of a set compiled in 1971 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the University of Maine Agricultural Experiment Station.

SOMERSET COUNTY, MAINE, SOUTHERN PART — SHEET NUMBER 75

75

585 000 FEET

665 000 FEET

(Joins sheet 71)

(Joins sheet 74)

(Joins sheet 76)

(Joins sheet 78)

605 000 FEET

655 000 FEET

N

Scale 1:20 000

1 Mile

5 000 Feet

Oak Hill

Leach Brook

Mt Tom

Mt Bett

Sucker Brook

Clark Brook

East Pond

Bog

Green Hill

NORTH POND

MERCER

Birch Point

Smithfield

THE SMITH FIELD

SERPENTINE

Smith Pond

EAST POND

Miller Islands

KENNEBEC CO

TRAIL

water

BhB BhC BkB BkC BkE Bo BuB BuC2 Mr Mo PdB PdC PcB Pa Sc Wa

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Photobase from 1965 aerial photographs. Grid values based on Maine plane coordinate system, west zone. 1927 North American datum.

SOMERSET COUNTY, MAINE, SOUTHERN PART NO. 75

(Joins sheet 72)

(Joins sheet 77)

(Joins sheet 79)

(Joins sheet 75)

630 000 FEET

655 000 FEET

610 000 FEET

N

Scale 1:20 000

1 Mile 5 000 Feet

0 0

1/4 1 000

1/2 2 000

3/4 4 000

1 5 000

Hoxies

North Fairfield

Holway Corner

Lost Brook

Martin Stream

Green Hill

BROOKS RIDGE

FAIRFIELD

SMITHFIELD

MAINE CENTRAL TRAIL

Stream

SOMERSET COUNTY, MAINE, SOUTHERN PART NO. 76

Photobase from 1965 aerial photographs. Grid values based on Maine plane coordinate system, west zone. 1927 North American datum.

This map is one of a set compiled in 1971 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the University of Maine Agricultural Experiment Station.

77

This map is one of a set compiled in 1971 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the University of Maine Agricultural Experiment Station.
Photobase from 1965 aerial photographs. Grid values based on Maine plane coordinate system, west zone, 1927 North American datum.

SOMERSET COUNTY, MAINE, SOUTHERN PART NO. 77

78

SOMERSET COUNTY, MAINE, SOUTHERN PART — SHEET NUMBER 78

N

(Joins sheet 75)

605 000 FEET

650 000 FEET

(Joins sheet 79)

585 000 FEET

635 000 FEET

1 Mile

5 000 Feet

Scale 1:20 000

NORTH POND

KENNEBEC COUNTY

EAST POND

KENNEBEC COUNTY

SMITHFIELD

Miller Islands

Varney Hill

Meadow Stream

Gredi

BhB BkB PcB PdB Lc BuB Sc SuC2 SuD2 BkC BkE StB CrC AaB Lk Bo Pa BuC2 CnC Wa AaC

8 137 225

SOMERSET COUNTY, MAINE, SOUTHERN PART NO. 78

Photobase from 1965 aerial photographs. Grid values based on Maine plane coordinate system, west zone. 1927 North American datum.

This map is one of a set compiled in 1971 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the University of Maine Agricultural Experiment Station.

SOMERSET COUNTY, MAINE, SOUTHERN PART — SHEET NUMBER 79

79

N

(Joins sheet 76)

(Joins sheet 78)

(Joins sheet 80)

610 000 FEET

650 000 FEET

635 000 FEET

630 000 FEET

SMITHFIELD

FAIRFIELD

Toulouse Corner

EAST POND

Horn Hill

Martin Stream

MAINE CENTRAL

KENNEBEC COUNTY

1 Mile 5 000 Feet

Scale 1:20 000

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Photobase from 1965 aerial photographs. Grid values based on Maine plane coordinate system, west zone, 1927 North American datum.

SOMERSET COUNTY, MAINE, SOUTHERN PART NO. 79

SOMERSET COUNTY, MAINE, SOUTHERN PART — SHEET NUMBER 80

(80)

N

(Joins sheet 77)

655 000 FEET

650 000 FEET

635 000 FEET

Fairfield Center

Wilcox Hill

Central Maine Sanatorium

Lawrence High School

FAIRFIELD

MAPLEWOOD CEMETERY

Fish Reservoir

Holbrook Brook

Fairfield Brook

GRAVEL PIT

MAINE CENTRAL

KENNEBEC COUNTY

KENNEBEC RIVER

FAIRFIELD

(Joins sheet 79)

Scale 1:20 000

1 Mile

5 000 Feet

SOMERSET COUNTY, MAINE, SOUTHERN PART NO. 80

Photobase from 1965 aerial photographs. Grid values based on Maine plane coordinate system, west zone. 1927 North American datum.

This map is one of a set compiled in 1971 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the University of Maine Agricultural Experiment Station.